DOCUMENT RESUME

ED 132 260 CE 008 341

TITLE Measures of Success: A Survey of Selected Vocational and Technical Education Programs in Florida which Train Students in Occupations Requiring Licenses.
INSTITUTION Florida State Advisory Council on Vocational and Technical Education, Tallahassee.
PUB DATE 76
NOTE 100p.

EDRS PRICE MF-$0.83 HC-$4.67 Plus Postage.
DESCRIPTORS Aircraft Pilots; *Certification; Cosmetology; Educational Accountability; Employment Qualifications; *Evaluation Criteria; Evaluation Methods; Health Occupations Education; Job Skills; Job Training; Occupational Information; Post Secondary Education; *Program Evaluation; State Programs; State Surveys; *Technical Education; Technical Institutes; *Vocational Education
IDENTIFIERS *Florida

ABSTRACT

A study of 13 vocational and technical education programs in Florida was conducted which represented an attempt to identify valid and reliable sources of data whereby some vocational programs might be evaluated in specified terms of effectiveness. The programs selected for study were among those which require graduating students to pass licensing examinations before they are allowed to legally participate to the fullest extent in the occupation. In essence, the study sought to identify how successful schools in Florida have been in training students in these programs. The 13 programs covered in the study are barbering, cosmetology, cosmetology specialist, dental hygiene technology, emergency medical technology 1, physician's assistant, professional nursing, practical nursing, masseur-masseuse, mortuary science, commercial pilot, airframe mechanic, and powerplant mechanic. The percent of student applicants passing their licensing exams was one measure chosen with which the success of the various vocational training programs was analyzed. Where available, data was compiled from both public and private school programs. The report contains separate sections on each occupation, each including job description, license requirements, training programs, and review of data. A concluding section charts commonalities of license requirements, presents summary of findings and council recommendations, and lists data sources for each occupation. (TA)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED132260

MEASURES OF SUCCESS:
A SURVEY OF SELECTED VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS IN FLORIDA WHICH TRAIN STUDENTS IN OCCUPATIONS REQUIRING LICENSES

U.S. DEPARTMENT OF HEALTH.
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

FLORIDA STATE ADVISORY COUNCIL
on
VOCATIONAL AND TECHNICAL EDUCATION

1976

CE 008 341

LIST OF COUNCIL MEMBERS

Mrs. Margaret B. Senne Chairman	Melbourne
Mr. John A. Beaumont Vice Chairman	Bradenton
Mr. Homer K. Addair	Bartow
Mr. L. Nelson Donnell	Cocoa
Mr. James S. Doyle	Miami
Mr. Edward A. Feaver	Tallahassee
Mr. John H. Frazer, Jr.	Tallahassee
Mr. C. A. Gertner	Jacksonville
Mr. Kenneth Hamilton	Clearwater
Mr. Charlie Harris	Tallahassee
Mr. Lawrence R. Hawkins	Miami
Mr. John H. Hinman	Pensacola
Miss Connie Hunt	Haines City
Mrs. Helen K. Leslie	St. Petersburg
Mrs. Evelyn J. Lewis	Fort Lauderdale
Dr. Wayne C. Malone	Dade City
Mr. Alfred B. McCoy	Tallahassee
Mr. Fred C. Murray	Umatilla
Mr. Frank H. Peterson	Jacksonville
Dr. Carl W. Proehl	Pensacola
Mr. Samuel J. Rampello	Temple Terrace
Dr. Raymond O. Shelton	Tampa
Dr. Howard K. Suzuki	Gainesville
Dr. Benjamin R. Wygal	Jacksonville

ACKNOWLEDGEMENT

The Council members and staff offer their sincere thanks to all of the persons who contributed their time and knowledge to assist in the development of this study. State Boards, area vocational schools, community colleges, and various state and federal governmental agencies were drawn upon for data and expertise. Without the help of these groups this study could not have been completed.

PREFACE

The Florida State Advisory Council on Vocational and Technical Education, which represents a wide cross section of the lay public, reflects a diversity of viewpoints. Included among its membership are representatives of business, labor, minority groups, education, and the general public. The Council represents the clients of the vocational education system. Its primary concern is that vocational programs, services, and activities in Florida function effectively and are available to all persons who need and can benefit from them.

The major responsibilities of the Council are:

1. To advise the State Board on the development of the *Florida State Plan for the Administration of Vocational Education* and on policy matters relating to State Plan administration;

2. To evaluate vocational education programs, services, and activities, and publish and distribute the results thereof;

3. To prepare and submit an annual evaluation report to the State Board, the U. S. Commissioner of Education, and the National Advisory Council on Vocational Education; and

4. To conduct at least one meeting each year to give the public an opportunity to express views and concerns about vocational education.

This study represents an effort made by the Council to partially fulfill the second major responsibility listed above. It is a partial effort in the sense that the Council and its staff are involved year round in assessment activities which relate to vocational programs, services, and activities.

By publishing and distributing this report, the Council reaffirms its continuing concern for the betterment of vocational and technical education in the State of Florida.

TABLE OF CONTENTS

LIST OF COUNCIL MEMBERS i

ACKNOWLEDGEMENT ii

PREFACE iii

PART ONE:

INTRODUCTION 1

PART TWO:

BARBERING 7

COSMETOLOGY AND COSMETOLOGY SPECIALIST 15

PART THREE:

DENTAL HYGIENE TECHNOLOGY 29

EMERGENCY MEDICAL TECHNOLOGY I 36

PHYSICIAN'S ASSISTANT 45

PROFESSIONAL NURSING (R.N., A.D.) 49

PRACTICAL NURSING 55

MASSEUR-MASSEUSE 61

MORTUARY SCIENCE 65

PART FOUR:

COMMERCIAL PILOT 75

AIRFRAME AND POWERPLANT MECHANICS 79

PART FIVE:

SUMMARY AND RECOMMENDATIONS 85

SOURCES OF DATA 90

PART ONE:

INTRODUCTION

PART ONE

INTRODUCTION

Too often the effectiveness of vocational education programs is gauged by purely subjective measures. The reasons for this are varied, but essentially they center upon the absence of valid and reliable data with which the programs can be evaluated. What, for example, constitutes a successful barbering program? Or a dental hygiene program? Many times the answers to questions such as these are based on subjective "standards"--standards which may or may not be valid, and which are often stated in abstract terms. This poses a problem to many lay citizens who are interested in and supportive of vocational education; they are often unable to tell which vocational programs are effective and which are not.

This study represents an attempt by the Council to identify valid and reliable sources of data whereby some vocational programs might be evaluated in specified terms of effectiveness.

The 13 programs selected for study were among those which require graduating students to pass licensing examinations before they are allowed to legally participate to the fullest extent in the occupation. The type of information gathered on these licensing programs varied due to the nature of the programs. In essence, however, the study sought to identify how successful the schools in Florida have been in training students in these programs.

The percent of student applicants passing their licensing exams was one measure chosen with which the success of the various vocational training programs was analyzed. Where available, data was compiled from both the public and private school programs.

In some instances, the Council was able to gather data relating to the percent of students who were able to find work in the same or a closely related area for which they had been trained. Regrettably, the Council was not able to collect all of the data it sought.

Basically this study was able to accomplish two major things:

1. Sources of data relevant to specific vocational programs were identified, as well as difficulties experienced in obtaining valid and reliable data; and,

2. Information was gathered on several vocational programs which allowed the Council to identify some unmet needs.

Outline

Parts Two, Three, and Four of this report deal with the 13 programs on which the study focused. Each of the thirteen programs is discussed in terms of job description, license requirements, a review of training programs, and a review of data.

The barbering, cosmetology, and cosmetology specialist programs are covered in Part Two. The Council was able to obtain much of the data it sought relating to these programs. Several tables are presented in Part Two, the majority of which deal with the cosmetology and cosmetology specialist programs.

Part Three is the largest section of the study and deals with seven health related occupational programs: dental hygiene, emergency medical technology, physician's assistant, registered nursing, licensed practical nursing, masseur-masseuse, and mortuary science.

Commercial pilot technology, airframe mechanic and powerplant mechanic programs are reviewed in Part Four. These three programs were the most difficult on which to gather data; only information available from the Veterans Administration was found to be of any real value regarding these three programs.

An overview of the major findings of the study is included in Part Five. This part of the report also lists recommendations made by the Council as a result of this study.

The last section of this report contains a list of the sources of data used in this study. The sources are listed under the applicable program.

The information given in this report concerning job descriptions, license requirements, and training programs is by no means exhaustive--nor was it intended to be so. The approach this study takes toward the above areas is more general than specific; the major thrust of this study was, as mentioned earlier, directed toward identifying sources of data and reviewing the data available insofar as it indicates the effectiveness of selected programs.

Those persons interested in a more detailed and exact description of the 13 programs discussed in this report should consult the appropriate bulletins, pamphlets, and other publications which have been designed to meet this need. Better yet, contact should be made with the schools offering the programs.

PART TWO:

BARBERING, COSMETOLOGY, AND COSMETOLOGY SPECIALIST

PART TWO

BARBERING, COSMETOLOGY, AND COSMETOLOGY SPECIALIST

As mentioned in the Introduction of this report, Part Two will deal with the barbering, cosmetology, and cosmetology specialist programs.

Since the Council staff was able to obtain most of the data needed for these programs, this part of the report affords a fairly accurate indication of the degree to which these programs have been successful in training students to pass licensing examinations.

BARBERING

Job Description

In Florida barbering is taken to include any one or any combination of the following practices: cut, trim, or style hair using comb, brush, clippers, scissors, or razors; shave, trim, or shape beards and moustaches; facial and scalp massages or treatments; shampoo, wave, singe, straighten, tint or dye, and apply hairdressing; fit hair pieces; and give advise on hair problems and styles and suggest grooming aids.

License Requirements

In order to obtain a license to practice barbering as a profession in Florida a person must:

1. be 18 years of age or older;
2. possess a tenth grade education (vocational rehabilitation clients need only possess an eighth grade education);
3. be of good moral character and temperate habits;
4. be a graduate of a state approved school of barbering with not less than 1500 hours of study and practice;
5. have no criminal record involving several convictions on hard drugs;
6. pass the State Board exam for apprenticeship with a grade not less than 75 percent on both the written and practical parts of the exam;

7. practice as a registered apprentice for six months under the immediate personal supervision of a registered master barber; and

8. take the State Board exam for master barber within six months after completing a six-month apprenticeship, and pass the exam with a grade not less than 75 percent on both written and practical.

The examination fee for an apprentice barber is $35, the same as it is for a master barber. An apprentice must pay a $10 annual license renewal fee, and the master barber must pay $12. All barbering licenses expire June 30 of each year.

Barbering Training Programs

A course of instruction and practice for barbering consists of a minimum of 1500 hours continuous study and practice of not more than eight hours in any one day, within an 18-month period. The average length of public and private school barbering training programs is eight to nine months. Specialized classroom and laboratory experiences include the following subjects: scientific fundamentals of barbering, physiology, hygiene, elementary chemistry relating to sterilization and antiseptics, massaging and manipulating the muscles of face, neck, scalp, haircutting, bobbing, waving, shaving, beard trimming and dyeing the hair.

A review of the Department of Education Bulletin No. 70H-25, *Standards for Vocational and Technical Education Courses*, showed that the standards developed by the Department of Education for the public school barbering course meet the standards for approved barbering programs established by the Florida Law Relating to the Practice of Barbering.

Applicants who fail to pass the practical part of the exam for apprenticeship are required to complete a further course of study and practice of not less than 250 hours which must be completed within a six-month period. If the written part of the apprentice exam is failed, the applicant may study on his own and take the next scheduled State exam.

A registered apprentice who fails the practical part of the master barbering exam must do an additional six months of apprenticeship. The apprentice may study on his own to retake the written part of the master barbering exam if this was the only part failed.

In both cases of reexamination, the applicant for apprenticeship and the apprentice for master's license must again pay a $35 exam fee.

According to figures given by the Florida Barber Sanitary Commission, approximately $600 - $800 in costs may be incurred by private school students for the course work, depending on the particular school attended. The public school barbering program is funded under vocational cost category III in the Florida Educational Finance Program (FEFP). The cost factor assigned to barbering is 2.18. This means that each full-time equivalent (FTE) student enrolled in the public barbering program generates approximately $1,624 in funding based on a base student cost of $745 per FTE student.

Florida has ten schools of barbering which are located in the following areas of the state: Ft. Lauderdale, Jacksonville, Largo, Miami, Orlando, Tallahassee, and Tampa. Nine of these schools are privately operated; the one public school is located at an area vocational-technical center. One of these schools has only recently begun operations, thus the data gathered for this study reflects enrollments from nine schools.

Review of Data

The results of the Barbers Sanitary Commission licensing examinations, both apprentice and masters, are not broken down by private and public school categories. The results of these examinations, shown on Table 1 for the four-year period 1972-75, can, however, be used together with data available from the Veterans Administration form VA-22-8723, Occupational Graduate Employment Record (Table 2), to form a fairly accurate picture of student success in the barbering program as measured by employment rates for completers and the ability of students to pass their licensing examinations.

Table 1 reveals that the number of applicants passing their exams in 1975 was actually less than it had been three years before. This figure is partially explained by the fact that the percentage of people passing their masters (i.e., advanced) exam is extremely low and has, in fact, been declining steadily for three straight years. While many of those failing the exams may be out-of-state licensees moving into Florida, the poor overall passing rate is low enough to note with concern.

The public school barbering program has had little effect on the licensing rates since its total output is much smaller than the private output. It is interesting to note in Table 2, for example, that only about three percent of the students enrolled in barbering during the years surveyed by the VA were enrolled in a public school; less than two and a half percent of all completers were in a public school program.

Table 3 shows the total number of licensed barbers (apprentice, master, and assistants) employed in Floirda by county, as of the end of July 1975. If an assumption is made that ten percent of all barbers will need to be replaced during the next year (through deaths, retirements, change of occupation, etc.) and that no increase is to be made in the total number of barbers in Florida, then it is evident that the total number of barbers in the state would decline. The decline would occur because the supply of barbers as measured by those passing their exams is less than the total number that would be needed to replace those barbers leaving the profession. In fact, there would not be enough to retain the current number of barbers even if only five percent of the total barber force needed to be replaced. These figures are highly significant in view of the fact that after experiencing a decline in the demand for barbers for several years, there is now an increasing demand for barbers in Florida. According to the Barbers Sanitary Commission, the trend toward shorter and more stylish hair has prompted an upsurge in the barber business.

As mentioned above in the separate item of discussion, the public school barbering program is funded through the FEFP at a relatively high level of cost. This information together with the analysis just presented of the data contained in Tables 1, 2, and 3 leads the Council to make the following observations:

A. The public school barbering program is a relatively high cost, low productivity program which contributes very little to the statewide supply of barbers in Florida.

B. The supply of barbers in Florida may not be keeping pace with the demand.

TABLE 1

BARBERS SANITARY COMMISSION LICENSING EXAM RESULTS
(Apprentice and Master)
1972-75

Year	Apprentice			Masters		
	# Taking Exam	# Passing	% Passing	# Taking Exam	# Passing	% Passing
1972	202	171	84.7%	171	135	78.9%
1973	158	138	87.3%	206	124	60.2%
1974	102	73	71.6%	83	36	43.4%
1975	166	144	86.7%	545	156	28.6%

SOURCE: Barbers Sanitary Commission.

NOTE: Figures are for both public and private schools.

TABLE 2

FOLLOW-UP SURVEY OF BARBERING STUDENTS
PRIVATE AND PUBLIC SCHOOLS
March 1, 1973 to February 28, 1975

	Private Schools (N=8)	Public Schools (N=1)
Number Enrolled	486	15
Number of Students Completing Course	399	10
Percent Completing Course	82.1%	66.7%
Percent Employed in the Same Type of Work	87.5%[1]	80.0%[2]
Percent Employed in the Same or a Closely Related Type of Work	90.9%[1]	80.0%[2]

SOURCE: Occupational Graduate Employment Record (VA Form 22-8723).

[1] Usable response rate 73.1%

[2] Usable response rate 50.0%

TABLE 3

BARBERS
As of July 31, 1975

County	# Barber Shops	# Apprentice Barbers	# Master Barbers	# Barbers Assistant
Alachua	43	27	145	1
Baker	4	1	9	0
Bay	36	17	105	3
Bradford	9	3	29	0
Brevard	85	43	261	1
Broward	256	134	1,035	6
Calhoun	6	3	18	0
Charlotte	13	4	44	1
Citrus	14	7	42	0
Clay	17	10	48	0
Collier	26	4	65	0
Columbia	12	5	34	0
Dade	538	315	1,989	2
De Soto	7	2	22	0
Dixie	4	0	9	0
Duval	257	259	809	13
Escambia	91	41	260	22
Flagler	2	1	6	0
Franklin	6	3	16	0
Gadsden	14	7	45	0
Gilchrist	4	1	9	0
Glades	0	0	4	0
Gulf	6	4	11	0
Hamilton	5	1	9	0
Hardee	7	1	18	0
Hendry	8	1	11	0
Hernando	8	1	27	0
Highlands	17	8	46	0
Hillsborough	243	198	816	6
Holmes	4	4	17	0
Indian River	19	9	58	0
Jackson	20	14	44	0
Jefferson	3	1	12	0
Lafayette	3	1	8	0
Lake	39	18	115	1
Lee	64	16	167	1
Leon	42	51	162	10
Levy	7	5	20	0
Liberty	5	1	8	0

TABLE 3 con't.

County	# Barber Shops	# Apprentice Barbers	# Master Barbers	# Barbers Assistant
Madison	10	1	17	0
Manatee	43	16	147	0
Marion	38	17	131	1
Martin	18	8	45	0
Monroe	26	11	76	0
Nassau	13	7	38	0
Okaloosa	35	21	96	12
Okeechobee	7	1	19	0
Orange	163	140	545	17
Osceola	16	4	55	0
Palm Beach	167	48	523	8
Pasco	46	11	155	0
Pinellas	235	131	777	14
Polk	114	63	330	0
Putnam	22	6	52	0
St. Johns	18	4	33	0
St. Lucie	29	13	75	2
Santa Rosa	20	14	47	2
Sarasota	68	13	194	0
Seminole	42	21	133	3
Sumter	9	6	26	1
Suwannee	10	4	31	0
Taylor	11	1	38	0
Union	4	0	7	0
Volusia	99	24	274	0
Wakulla	4	3	8	0
Walton	7	2	16	0
Washington	7	1	17	0
TOTALS	3,221	1,848	10,495	132

SOURCE: Department of Professional and Occupational Regulation, Tallahassee, Florida.

COSMETOLOGY AND COSMETOLOGY SPECIALIST

Job Description

A cosmetologist is defined as one who practices cosmetology in its entirety. In Florida this is taken to include any one or any combination of the following practices: cut, singe, thin, style, wave, curl, steam, set, straighten, and brush hair; shampoo, tint, color, bleach or dye hair; give facials and scalp massage; apply cosmetics to the face or neck; give manicures or pedicures; and apply permanent waving to the hair.

Since the State of Florida does not have a manicurist license, cosmetology specialists cover the duties of a "manicurist" and "pedicurist," including the practice of cutting, trimming, polishing, tinting, coloring, and/or cleansing the nails of any person. In addition to (1) manicuring and (2) pedicuring, the cosmetology specialist may also give (3) facials, (4) shampoos, (5) color rinses, and (6) arching of the eyebrows. While the services of cosmetology specialists are limited to these six special areas, cosmetologists may perform services in these six areas in addition to the other cosmetology practices listed in the above paragraph.

License Requirements

In order to obtain a license to practice cosmetology either as a cosmetology specialist in Florida a person must:

1. (a) Cosmetologist: be 16 years of age;

   (b) Cosmetology Specialist: be 17 years of age;

2. be a U. S. citizen;

3. possess a tenth grade education;

4. be certified by a physician as free from contagious or infectious disease;

5. be of good character and temperate habits;

6. (a) Cosmetologist: be a graduate of an approved program with not less than 1200 hours of study and practice;

   (b) Cosmetology Specialist: be a graduate of an approved program with not less than 500 hours of study and practice; and,

7. pass the State Board exam.

To meet the requirements for a master cosmetologist, a registered cosmetologist may either practice under the supervision of a registered master cosmetologist for a period of one year and pass the master's exam, or practice for two years and pay the licensing fee. The master's exam consists of written, practical, and oral tests.

Applicants for both the cosmetologist and cosmetology specialist license must pay $35 in examination costs and a $10 license fee.

Cosmetology Training Programs

A course of instruction and practice for a cosmetologist consists of 1200 hours of continuous study and practice for not more than 8 hours in any one day, nor more than 40 hours per week within a maximum period of 18 months and a minimum period of 7 months. Instruction given in specialized classrooms provides laboratory experiences that cover the following subjects: scientific fundamentals for cosmetology, physiology, hygiene, elementary chemistry relating to sterilization and antiseptics, and massaging and manipulating the muscles of the face, neck, and scalp.

These laboratory experiences also provide training in giving shampoos, rinses, and scalp treatment; hair styling, setting, cutting, tinting, bleaching, permanent waving, facials, manicuring and hand and arm massaging. Customer relations, salon management, business methods and recordkeeping are also covered in the training program.

After graduating from an approved program, applicants must pass State Board exams which include both practical demonstrations and written and oral tests. An average grade of not less than 75 percent must be made on all tests in order to receive a license. If an applicant fails to pass the exam, he/she must return to a school of cosmetology for additional instruction on any theory or practical subject failed. These postgraduate courses are required by law to last no more than six weeks.

Cosmetology specialist courses consist of 500 hours of instruction designed to provide for the study and practice of manicuring, pedicuring, facials, and shampooing. These 500 hours must be broken up in the following manner: 125 hours of theory and practice of manicuring and pedicuring; 25 hours of ethics, sanitation, hygiene and anatomy; 300 hours of theory and practice of facials; and 50 hours of theory and practice of shampooing. Instruction in customer relations is offered at some of the schools of cosmetology, but it is not required by law.

After graduating from an approved program, an applicant for a cosmetology specialist license must pass a State Board examination in the fundamentals of manicuring, pedicuring, facials, and shampooing; physiology and hygiene; and elementary chemistry relating to sterilization and antiseptics. If an applicant fails to pass the exam, he is required to re-enroll in a school of cosmetology and complete a further course of practice of not less than 50 hours for each practical subject failed. If theory subjects are failed and practical subjects passed, the applicant must return to school for the purpose of passing the examination for the theory subject failed.

A review of the Department of Education bulletin No. 70H-25, *Standards for Vocational and Technical Education Courses* showed that the standards developed by the Department of Education for public school cosmetology programs for both cosmetologist and cosmetology specialists meet the standards for approved cosmetology programs established by the Florida Cosmetology Law. Public programs are offered in high schools, area vocational-technical centers, and community colleges. The high school and area center programs are funded under vocational cost category III in the FEFP with an assigned cost factor of 2.18.

Review of Data

Much of the data used in this section of the report was supplied by the Board of Cosmetology for the State of Florida. Their assistance enabled the Council staff to more efficiently compile the information needed.

Table 4, for example, was developed from State Board material and shows that in 1975 approximately 36 percent of cosmetology enrollments were in public schools. The public school enrollments were, on the average, much smaller for each school than were private school enrollments, a fact which can be noted in Table 5.

Tables 4 and 5 become all the more significant when studied in relation to Table 6. This latter table reveals that the percentage of public school cosmetology and cosmetology specialist students passing the licensing exams during the two-year period 1974-75 was lower than the private school passing rates. Since the average enrollment per school is lower in public schools, the lower success rate for these schools compared with private schools cannot be attributed to an overcrowding of training facilities. No information was available on the number of teachers in each schools; thus the pupil-teacher ratio is not known.

It should be mentioned at this point that the public cosmetology schools are subject to limitations not imposed on private schools. Private cosmetology schools, for instance, are often able to devote their total resources to the teaching of cosmetology. Public schools must operate within resource parameters dictated by the need to consider other educational programs.

Part of the reason for public school students lagging behind their counterparts in private cosmetology schools, as measured by success in passing the State Board exams, may be explained by the data shown in Table 7. According to the information contained in Table 7, the percentage of students from public high school cosmetology programs passing their Board examinations is much lower than for those students in the area center and community college cosmetology programs. It is also interesting to note in this same table that the percent passing in high school programs declined in 1975 from the 1974 level; yet, the success rate in area centers and community colleges showed an increase during the same time period.

The data in Table 7 affords no explanation as to why students from high school programs taking the state licensing examinations in 1975 achieved a passing rate almost 20 percent lower than community college students. A full explanation for this phenomenon can come only from a more indepth assessment of the high school cosmetology programs.

The Council staff reviewed the data available from the State Board of Cosmetology and concluded that information which covered a longer time span would be needed before truly meaningful comparisons could be made among the three public school cosmetology delivery systems. It would be helpful if trend data were compiled about public school cosmetology programs covering a minimum of a five-year period.

Table 8 displays the test results of private and vocational school applicants who retook their cosmetology and cosmetology specialist examinations. There does not appear to be any noticeable difference in the success rates for these two groups of students.

Cosmetology students from eleven community colleges and thirteen area centers were followed up for employment results during the 1973 to 1975 period. The results of this followup (Table 9) show that roughly six out of ten students enrolled in the cosmetology program in community colleges and area centers actually complete the program. The percent of these completers working in the same or closely related type of work for which they have been trained is quite high; this same type of data was not available to measure what percent of high school cosmetology program completers were being employed in the field for which they had been trained.

The total number of persons actively employed in the cosmetology field in Florida is broken down by counties in Table 10. According to the data in this table, there is an average of 5.9 persons (i.e., cosmetologists, cosmetology specialists, and master cosmetologists) employed in each cosmetology salon in Florida. Assuming a separation rate of five percent for cosmetologists during the next year, there would not be enough new licensees to keep current employment levels from dropping. As there appears to be no reason to forecast a sharp and prolonged decrease for the services provided by cosmetologists, it seems likely that most qualified cosmetologists in Florida should be able to find employment.

In summary, Tables 4 through 10 provide the Council with enough information to offer the following:

A. Students from high school cosmetology programs had a licensing exam success rate in 1975 which was approximately 20 percent lower than that obtained by students from all other public and private programs.

B. Sufficient employment opportunities for licensed cosmetologists exist in Florida to enable most completers of the cosmetology programs to find jobs in the area for which they have been trained.

TABLE 4

PUBLIC AND PRIVATE COSMETOLOGY SCHOOL ENROLLMENTS
1975

	Private Schools	Public[1] Schools	Total Enrollment
Cosmetology, Training	3,041	2,131	5,172
Specialists	371	24	395
Post Graduate	304	25	329
Additional Hours	184	25	209
Student Instructor Training	28	0	28
TOTALS	3,928	2,205	6,133
PERCENT OF TOTAL ENROLLMENT	64.05%	35.95%	100.0%

SOURCE: Board of Cosmetology, State of Florida, Year End Report: Fiscal Year 1974-1975.

---

[1] Data gathered by the Florida Department of Education differs with enrollments reported by the Board of Cosmetology. There is a possibility the differences are caused by the State Board combining the 11th and 12th grades in the public school enrollment, instead of only the graduating group (12th grade).

TABLE 5

COSMETOLOGY SCHOOLS - 1975

	Private	Public	Total
Number of Schools	64	60	124
Percent of Total Schools	51.6%	48.4%	100.0%
Average Enrollment per School	61.38	36.75	49.46

SOURCE: Board of Cosmetology, State of Florida, Year End Report: Fiscal Year 1974-1975.

TABLE 6

EXAMINATION STATISTICS, COMBINED TOTALS: COSMETOLOGY AND COSMETOLOGY SPECIALIST Private vs. Public Schools

	Private		Public	
	1974	1975	1974	1975
Passed	1,430	1,233	707	699
Failed	445	282	260	187
Total Exams	1,875	1,515	967	886
% Passed Exams	76.26%	81.39%	73.11%	78.89%

SOURCE: Board of Cosmetology, State of Florida, Year End Report.

TABLE 7

COSMETOLOGY AND COSMETOLOGY SPECIALIST
COMPARISON OF PUBLIC SCHOOL PROGRAMS--STUDENTS PASSING LICENSING EXAMS: AREA CENTERS, HIGH SCHOOLS, AND COMMUNITY COLLEGES
(1974 and 1975)

	1974[1]			1975[2]		
	No. Taking Test	No. Passed	Percent Passing	No. Taking Test	No. Passed	Percent Passing
Area Centers	581	434	74.7%	502	418	83.3%
High Schools	242	161	66.5%	186	117	62.9%
Community Colleges	144	122	77.7%	198	164	82.8%
TOTALS	967	707	73.11%	886	699	78.89%

[1] SOURCE: State Board of Cosmetology, State of Florida, Year End Report of School Activities, Fiscal Year 1973-74.

[2] SOURCE: State Board of Cosmetology, State of Florida, Year End Report of School Activities, Fiscal Year 1974-75.

NOTE: Florida Department of Education data on examination statistics differ from those presented in this table on a year-by-year comparison due to different reporting periods.

TABLE 8

BOARD OF COSMETOLOGY EXAMINATION STATISTICS: RETAKE STATISTICS ACCORDING TO SCHOOLS AND CATEGORIES
1975

	Passed	Failed	Total	Percent Passed
Private School Applicants				
Cosmetologists	254	8	262	96.9%
Specialists	13	0	13	100.0%
	267	8	275	97.1%
Vocational School Applicants				
Cosmetologists	173	3	176	98.3%
Specialists	1	0	1	100.0%
	174	3	177	98.3%

SOURCE: Board of Cosmetology, State of Florida, Year End Report: Fiscal Year 1974-1975.

TABLE 9

FOLLOW-UP SURVEY OF COSMETOLOGY STUDENTS COMMUNITY COLLEGES vs. AREA CENTERS (1973 to 1975)

	Community Colleges	Area Centers	Survey Total
Number of Schools	11	13	24
Number Students Enrolled	659	789	1,448
Number of Students Completing Course	398	445	843
Percent Completing Course	60.4%	56.4%	58.2%
Percent Employed in Same Type of Work	86.2%	95.2%	(1)91.6%
Percent Employed in Same or Closely Related Type Work	86.8%	95.9%	(1)92.3%

(1) Weighted Percentages

SOURCE: Occupational Graduate Employment Record, VA Form 22-8723.

TABLE 10

PERSONS EMPLOYED IN COSMETOLOGY BY COUNTY
(As of July 31, 1975)

County	# Cosmetology Salons in Each County	Number Cosmetologists	Number Cosmetology Specialists	Master Cosmetologists
Alachua	99	73	4	411
Baker	19	12	0	50
Bay	119	134	5	409
Bradford	25	20	0	63
Brevard	193	378	10	946
Broward	777	814	226	4,485
Calhoun	16	8	0	33
Charlotte	39	33	3	133
Citrus	41	41	0	135
Clay	39	41	0	154
Collier	65	35	8	252
Columbia	44	23	1	136
Dade	1,141	1,872	845	7,351
De Soto	11	14	0	45
Dixie	11	10	0	30
Duval	595	559	29	2,448
Excambia	221	226	4	878
Flagler	10	8	0	28
Franklin	10	6	0	24
Gadsden	41	7	0	111
Gilchrist	4	0	0	17
Glades	2	1	0	9
Gulf	19	12	0	38
Hamilton	13	11	0	31
Hardee	15	11	0	63
Hendry	11	8	1	49
Hernando	48	21	0	115
Highlands	45	36	0	159
Hillsborough	514	673	17	2,255
Holmes	16	20	0	40
Indian River	60	43	3	191
Jackson	51	49	0	147
Jefferson	11	6	0	33
Lafayette	8	3	0	15
Lake	93	97	0	357
Lee	149	147	4	645
Leon	100	101	5	472
Levy	26	23	0	86
Liberty	5	2	0	20

TABLE 10 con't.

County	# Cosmetology Salons in Each County	Number Cosmetologists	Number Cosmetology Specialists	Master Cosmetologists
Madison	18	26	1	42
Manatee	132	155	5	590
Marion	95	130	2	426
Martin	46	37	1	162
Monroe	55	42	6	209
Nassau	37	26	0	122
Okaloosa	79	118	1	335
Okeechobee	15	12	1	65
Orange	309	398	17	1,605
Osceola	42	31	0	164
Palm Beach	438	456	115	2,1[illegible]3
Pasco	126	118	1	458
Pinellas	647	729	41	3,101
Polk	353	218	10	1,119
Putnam	38	29	1	163
St. Johns	42	38	2	145
St. Lucie	63	50	6	260
Santa Rosa	43	41	0	163
Sarasota	173	222	12	796
Seminole	90	94	5	420
Sumter	23	11	1	90
Suwannee	30	26	0	81
Taylor	29	19	1	85
Union	2	4	0	8
Volusia	222	219	0	949
Wakulla	6	7	0	27
Walton	28	14	0	66
Washington	22	23	0	59
TOTALS	7,952	8,989	1,414	36,727

SOURCE: Department of Professional and Occupational Regulation, Tallahassee.

PART THREE:

HEALTH RELATED

OCCUPATIONAL PROGRAMS

PART THREE

HEALTH RELATED OCCUPATIONAL PROGRAMS

Part Three of this report will deal with the following seven licensed health related occupations: Dental Hygiene Technology; Emergency Medical Technology I; Physician's Assistant; Nursing, R.N., A.D.; Practical Nursing; Masseur-Masseuse Technology; and Mortuary Science. The Council was able to obtain much of the data needed for most of these programs. The difficulties that were encountered with some of the programs in gathering data are discussed under the program review.

Opticianry Dispensing Technology offered at Hillsborough Community College and Hearing Aid Specialist offered at Lindsey-Hopkins Education Center (Miami) are two new licensed occupational programs that are health related. The Council concluded that it would be best to review these two public programs at a later date because each has had only one graduating class.

DENTAL HYGIENE TECHNOLOGY

Job Description

In Florida the duties of a dental hygienist include: removing calculus deposits, accretions and stains from exposed surfaces of the teeth and from the gingival sulcus; exposing x-ray films; making topical application of medicinal agents to the teeth for prophylactic purposes; removing and inserting temporary dressings and generally clearing the area after work has been performed by the dentist. The dental hygienist often records the patient's medical and dental history and charts the conditions in his mouth for evaluation and diagnosis by the dentist. The dental hygienist is also trained to apply flourides to the teeth of children to prevent dental decay, polish silver fillings as a preventive to decay, and take x-rays and impressions of the teeth. In general, the dental hygienist assists the dentist in the detection and diagnosis of disease.

Dental hygienists may perform their duties only in the office of a registered and licensed dentist and under the supervision of such dentist, or in public institutions which are approved by the Florida Board of Dentistry.

Licensing Requirements

To meet the requirements to be licensed as a dental hygienist in Florida, a person must:

1. be a graduate of an accredited dental hygiene school as approved by the Florida Board of Dentistry;

2. furnish transcripts of college and dental hygiene school credits, which must be sent directly from the principal or dean of each school attended to the Board;

3. be of good moral character;

4. be a citizen of the United States;

5. have successfully completed all phases of the National Board of Dental Hygiene Examination within the past five years (grades must be furnished to the Florida State Board of Dentistry 30 days prior to the State exam);

6. pay an exam and license fee of $25;

   (Note: fee for re-examination is an additional $25)

7. have a completed application with two autographed photographs;

8. have completed the practical and written exams with a maximum grade of 75 for licensure;

9. furnish their own patient for the practical exam. This patient must have at least 20 natural teeth upon which calculus deposits can be distinctly seen but not so difficult that the applicant cannot do a thorough prophylaxis;

10. furnish own instruments and materials for practical exam; and

11. submit a copy of an honorable discharge from the armed services (if applicable).

Dental Hygiene Technology Training Program

There is only one type of training program available to dental hygientists in Florida and that is at an accredited hygiene school approved by the Florida Board of Dentistry. Programs approved by the Florida Board of Dentistry are those which have received accreditation from the American Dental Association's Council on Education. The five programs offered in Florida are all located at community colleges and lead to an associate degree. One of the five is relatively new and a sixth one is in the planning stage.

A typical two-year program of instruction includes a combination of theory, laboratory and supportive courses. Technical courses cover oral biology; periodontics; embryology and histology; preventive dentistry; dental anatomy; microbiology and pathology; anatomy and physiology;

clinical technique; dental health education; oral hygiene practice; pharamacology; roentgenology; and nutrition. Ethics and office practices are also covered in the program. Supportive courses include English, social sciences, biology, chemistry, and speech.

Review of Data

The Council was able to gather the data it needed for this section of the study via a questionnaire that was mailed to the five community colleges in Florida offering dental hygiene programs. All five of the schools responded to the questionnaire.

Table 11 shows that these five community college programs graduated 689 dental hygiene students from 1971 to 1975. Caution should be used in noting the 60.5 overall percent completion rate; the normal length of the dental hygiene program is two academic years, and one of the colleges did not start its program until 1973. This means that the percent of students completing the programs on a statewide basis will probably start increasing, as was the case from 1974 (60.2 percent) to 1975 (69.5 percent).

The next table, Table 12, contains information on state and national licensing examination results for the five dental hygiene programs in Florida. The percent of students passing these examinations is remarkably high; less than three percent of the community college dental hygienest graduates taking the state exams from 1971 to 1975 were unable to pass. During the same time period, less than five percent failed the national examination. It should be pointed out that the number of students taking the national exams is seemingly higher than the total number of graduates during this time period due to the fact that some of the students failed on their first attempt at the test and tried again at a later date.

The community colleges were also asked by the Council to supply information regarding student costs incurred for the dental hygiene program. The answers received to this part of the questionnaire are displayed in Table 13.

The wide range of "other" costs can be explained by the fact that some of the community colleges took into account such expenses as textbooks, instruments, uniforms, and safety glasses, while the other college ignored these costs. Perhaps the most interesting information in this table is the wide range among colleges for tuition and lab costs. There is a $159 range in tuition costs and a $130 range in lab fees. These figures are based on the assumption that the student is a Florida resident. Out-of-state residents pay considerably more tuition fees.

The questionnaire also revealed that all five colleges offer the dental hygienist program primarily in the morning and afternoon hours--only one of the college offered the program on an evening basis.

Four of the five colleges also responded that the average student-teacher ratio in this program was between 5 and 10 to 1, while the fifth college showed the student-teacher ratio as between 10 and 15 to 1.

Although specific data were not available to the Council regarding the employment demand for dental hygienists in Florida, the Florida Board of Dentistry indicated that employment opportunities are excellent in this field.

The dental hygienist programs in Florida's community colleges appear to be among the more successful occupational programs in terms of licensing rates.

TABLE 11

DENTAL HYGIENE PROGRAM ENROLLMENTS AND COMPLETIONS 1971-75

Year	# Students Enrolled	# Students Completing Program	Percent Students Completing
1971	254	106	41.7%
1972	217	158	72.8%
1973	216	132	61.1%
1974	221	133	60.2%
1975	230	160	69.6%
TOTALS	1,138	689	60.5%

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

TABLE 12

DENTAL HYGIENE PROGRAM
STATE AND NATIONAL LICENSING EXAM RESULTS
1971-75

Year	State Exams			National Exams		
	# Students Taking	# Students Passing	% Students Passing	# Students Taking	# Students Passing	% Students Passing
1971	106	106	100.0%	106	104	98.1%
1972	158	158	100.0%	158	149	94.3%
1973	132	128	97.0%	135	124	91.9%
1974	133	129	97.0%	133	130	97.7%
1975	151	140	92.7%	160	151	94.4%
TOTALS	680	661	97.2%	692	658	95.1%

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

TABLE 13

DENTAL HYGIENE PROGRAM
SUMMARY OF STUDENT COSTS

Community College	Types of Fees and Amounts (1)				# Years Program Has Been Offered
	Registration	Tuition	Lab	Other	
A	0	$820	$ 30	$ 10	3
B	0	$979	$130	$175	5
C	0	$840	$ 45	$ 10	13
D	$ 5	$945	0	$570	13
E	$10	$912	0	$675	13

(1) Calculated for the total length of time required to complete the program (two academic years).

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

EMERGENCY MEDICAL TECHNOLOGY I

Job Description

An Emergency Medical Technician (EMT) is a health professional who has been trained to perform, at the scene of a medical emergency and during transportation to a hospital or other medical facility, basic life saving and supportive measures that do not require supervision by a physician. The EMT I's duties include determining the nature and extent of illness or injury and establishing priorities for the required emergency care. The technician may render such emergency care as opening and maintaining an airway, giving positive pressure ventilation, cardiac resuscitation, controlling of hemorrhage, treatment of shock, immobilization of fractures, bandaging, assisting in childbirth, management of mentally distrubed patients, and initial care of poison and burn patients.

The EMT has the responsibility to determine the transportation routes and the methods of transportation of patients, to maintain an ambulance in efficient operating condition, and to make verbal and written reports of his observations and care of patients.

If licensed as an ambulance driver, the EMT will also be responsible for driving the ambulance to the emergency location.

Emergency Medical Technology I Certification Requirements

For a person to be certified as an EMT I in Florida, he/she must:

1. be 18 years of age, or older;

2. have successfully completed the 81-hour Department of Transportation (D.O.T.) course for emergency medical technicians or equivalency;

3. be of good physical and mental health;

4. be free from addiction to alcohol or harmful drugs;

5. be able to lift and carry up to 100 pounds;

6. have both far and near visual acuity necessary for driving and examining the patient;

7. have normal visual color discrimination;

8. have a passing score of 75 percent on registry exam;

9. pay a registration and certification fee of $15;

10. have filed an application with the Emergency Medical Services Section, Division of Health, 30 days prior to the exam date; and

11. be able to provide enrollment verification (no examination admission card will be issued without instructor's signature and dates).

The indirect requirements are those requirements necessary for eligibility to take the EMT I course. Those requirements are:

1. have a high school diploma, or equivalent; and

2. have a current certificate of the State Red Cross Course (20 hours).

Emergency Medical Technology I Training Program

The EMT 81-hour D.O.T. course is, at present, given at 32 EMT training centers throughout the State of Florida at the community colleges and vocational-technical schools.

As stated in the Florida Emergency Medical Services Act of 1973, the courses must be at least 80 hours, cover all lessons of the D.O.T. curriculum and be approved by the Division of Health.

The 81 hours must be divided in 71 clock hours of classroom activities and 10 hours of in-hospital training. In the classroom session, a ratio of 40% to 60% is recommended between the time devoted to didactic and practical aspects respectively. The time given to the registry examination is not a part of the 81-hour D.O.T. course. The 81-hour D.O.T. basic curriculum is the minimum required, but it does not prohibit an institution from extending the length and depth of the course. A minimum of 125 hours is recommended by the Division of Health.

The classroom phase of the EMT I program consists of instruction in the following subject areas: an overview of the responsibilities of the EMT I; a survey of anatomy and physiology; a consideration of life-threatening emergencies; injuries; common medical emergencies; childbirth; problems of child patients; procedures for lifting and moving patients; environmental emergencies; methods of extraction from automobiles, and operational aspects.

The ten hours of in-hopsital observation and instruction places emphasis upon skill training with rotation through the emergency, surgical, intensive care, obstetrical, and psychiatric areas of a hospital.

It is also recommended that there be a ratio of one instructor per ten students in the practical instruction and no more than 30 students in the didactic class sessions.

Review of Data

The data presented on the next eight tables were obtained through a questionnaire developed by the Council staff and mailed to the 24 community colleges and 8 area centers in Florida that offer EMT I programs. A usable response rate of 90.63 percent was obtained from 22 community colleges and 7 area centers.

Student enrollment and completion data are displayed in Table 14. Care must be taken in interpreting the figures on this as well as the other tables dealing with EMT programs. For one thing, over half the schools responding to the survey have had EMT I programs in operation for three years or less. The number of schools having a program in operation during a given year is specified in each applicable table. In Table 14, for example, the data for 1971 came from only four schools, in 1972 from ten schools.

Despite these limitations on data interpretation, the EMT I program in Florida can be seen as experiencing rapid growth. From 1973, a year in which we have data from 26 schools, until 1975 there was a 76.25 percent growth in enrollment.

The percentage of students passing the licensing examinations is shown in Table 15. A particularly interesting feature of this table is the number of schools that did not have this information available. Several schools simply do not keep records on how well their students do in the EMT I examinations. Those schools which do have records on licensing results shown an overall success rate from 1971 to 1975 of almost 78 percent.

Many of the schools responding to the survey did not have the results in from the last licensing exam of 1975. The number shown as taking the exams represents only those programs where data were available.

Enrollments and completions are further broken down in Table 16 and 17. A comparison of the two tables shows that the sample of area center EMT programs had a completion rate of 86.89 percent as opposed to a 83.32 percent completion rate for the larger sample of community colleges.

Tables 18 and 19 compare licensing rates for the community colleges and area centers. As may be noted, during 1974 and 1975 the licensing rates for the sample of area centers and the sample of community colleges were only slightly different. Statistical tests were not run, however, to determine if there was any significant difference in the licensing rates for the two types of schools.

A comparison of the total enrollments and completions (Table 20) for the survey shows that the vast majority of EMT I students are enrolled in community college programs. The 22 community colleges had an average enrollment of over 154 students per college in 1975, while the seven area centers had an average enrollment of 79.7.

Although not displayed in tabular form the survey of the 29 schools also gathered information regarding student costs, student-teacher ratios, and times of day the EMT course is usually offered.

The community colleges responding to the survey indicated that a larger percent of their classes had a student-teacher ratio of more than 20 to 1 than did the area centers (31.8 percent opposed to 14.3 percent).

All 29 area centers and community colleges in the survey indicated that the EMT I program is offered in the evening hours; three community colleges and one area center also offer the program in the morning hours.

The seven area centers reported student costs ranging from $10 to $35, depending upon whether or not books are included. The 22 community colleges reported costs ranging from $4 to $80--once again, many schools ignored book costs. Other costs to the EMT I student were lab fees, parking decals, and insurance.

Written Comment

Some of the most interesting and useful information in the survey came from written comments made on the questionnaire. Listed below are some of these comments:

> "It would be advantageous to include the standard Red Cross course as part of Emergency Medical Technology I."
>
> "We use the local hospital emergency room as a student learning station."
>
> "EMT I is offered here only on an as-needed basis. It is not regularly scheduled."
>
> "There must be some clearly defined admission terms for these courses. Most of our students who failed do so due to inability to read and comprehend medical information. Other students seem excited about the ambulance rides but had no real comprehension of the responsibilities in training and functions."
>
> "Our [student-] teacher ratio varies from 5:1 to 20:1. Our maximum allowable size class is 20, but in many cases we will have two or more instructors on board during a particular session. The average would be 15:1."
>
> "Follow DOT curriculum."
>
> "We will start EMT II as a non-credit in January. EMT I is planned for summer. By Fall 1976 we plan to have an EMT program for A. S. degree which will take two years."

Several schools indicated by their responses that they were operating EMT II programs. These programs have a recommended course length of 450 hours. Training in the EMT II is more advanced than in the EMT I program, and the graduates of the EMT II programs are usually assigned duties that entail a good deal of responsibility for emergency medical treatment.

It is too early to evaluate the EMT II programs, but there is some reason to believe that hospitals throughout Florida will turn more and more often to graduates from these programs to fill jobs in the emergency medical field. Their training and experience should provide them with the basis to offer a unique service.

TABLE 14

E.M.T. ENROLLMENTS AND COMPLETIONS--COMMUNITY COLLEGE AND AREA CENTERS (1971-75)

Year	Number Schools*	Number Enrolled	Number Completed	Percent Completed
1971	(4)	136	121	88.97%
1972	(10)	591	463	78.34%
1973	(26)	2,240	1,905	85.04%
1974	(27)	3,323	2,889	86.94%
1975	(29)	3,948	3,204	81.16%
TOTALS		10,238	8,582	83.82%

*Number of schools supplying usable data for year specified.

TABLE 15

RESULTS OF E.M.T. LICENSING EXAMINATIONS--COMMUNITY COLLEGES AND AREA CENTERS (1971-75)

Year	Number Schools*	# Taking Exams	# Passing Exams	Percent Passing
1971	(2)	97	93	95.88%
1972	(7)	268	220	82.09%
1973	(21)	1,501	1,212	80.75%
1974	(23)	2,395	1,759	73.44%
1975	(21)	1,546	1,231	79.62%
TOTALS		5,807	4,515	77.75%

*Number of schools supplying usable data for year specified.

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

TABLE 16

E.M.T. ENROLLMENTS AND COMPLETIONS AREA CENTERS ONLY (1971-75)

Year	Number Schools*	Number Enrolled	Number Completed	Percent Completed
1971	(0)	0	0	0
1972	(2)	60	49	81.67%
1973	(7)	382	335	87.70%
1974	(6)	457	405	88.62%
1975	(7)	558	477	85.48%
TOTALS		1,457	1,266	86.89%

*Number of schools supplying usable data for year specified.

TABLE 17

E.M.T. ENROLLMENTS AND COMPLETIONS COMMUNITY COLLEGES ONLY (1971-75)

Year	Number Schools*	Number Enrolled	Number Completed	Percent Completed
1971	(4)	136	121	88.97%
1972	(8)	531	414	77.97%
1973	(19)	1,858	1,570	84.50%
1974	(21)	2,866	2,484	86.67%
1975	(22)	3,390	2,727	80.44%
TOTALS		8,781	7,316	83.32%

* Number of schools supplying usable data for year specified.

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

TABLE 18

RESULTS OF E.M.T. LICENSING EXAMS
AREA CENTERS ONLY (1971-75)

Year	Number Schools*	# Taking Exams	# Passing Exams	Percent Passing
1971	(0)	0	0	0
1972	(2)	49	40	81.63%
1973	(6)	327	271	82.87%
1974	(6)	394	297	75.38%
1975	(6)	197	162	82.23%
TOTALS		967	770	79.63%

* Number of schools supplying usable data for year specified.

TABLE 19

RESULTS OF E.M.T. LICENSING EXAMS
COMMUNITY COLLEGES ONLY (1971-75)

Year	Number Schools*	# Taking Exams	# Passing Exams	Percent Passing
1971	(2)	97	93	95.88%
1972	(5)	219	180	82.19%
1973	(15)	1,174	941	80.15%
1974	(17)	2,001	1,462	73.06%
1975	(15)	1,349	1,069	79.24%
TOTALS		4,840	3,745	77.38%

*Number of schools supplying usable data for year specified.

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

TABLE 20

COMPARISON OF PERCENT OF TOTAL E.M.T. ENROLLMENTS AND COMPLETIONS-- AREA CENTERS vs. COMMUNITY COLLEGES 1972-75

Year	% Total Enrollments		% Total Completions	
	Area Centers	Community Colleges	Area Centers	Community Colleges
1972	10.15%	89.85%	10.58%	89.42%
1973	17.05%	82.95%	17.59%	82.41%
1974	13.75%	86.25%	14.02%	85.98%
1975	14.13%	85.87%	14.89%	85.11%
TOTALS	14.23%	85.77%	14.75%	85.25%

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

PHYSICIAN'S ASSISTANT

Job Description

The American Medical Association defines a physician's assistant as a skilled person qualified by academic and practical training to provide patient services under the supervision and direction of a licensed physician who is responsible for the performance of that assistant. The physician's assistant is trained to work in a variety of medical specialty areas. Among the duties performed by a physician's assistant are: the administration of physical examinations and taking patient histories; the performance of routine procedures such as EKG tracings and blood samples; giving injections, immunizations, and the care of wounds; providing instruction to patient on diet, disease, and normal growth and development; and providing services to patients in their homes, nursing homes, and extended care facilities.

Certification Requirements

To be eligible for a physician's assistant certificate in Florida, an applicant must:

1. be able to give evidence of graduating from a two-year physician's assistant program that is accredited by the American Medical Association;

2. have passed the National Certifying Examination developed by the National Board of Medical Examiners;

3. be of good moral character; and

4. pay a $25 application fee for certification. (NOTE: A fee of $50 must be paid by the supervising physician at the time of application)

The Florida State Board of Medical Examiners requires applicants who have not graduated from a formal physician's assistant program to work for a practicing physician in Florida for a period of two years immediately preceding the date of application. These applicants must also pass the National Certifying Exam developed by the National Board of Medical Examiners. Employing physicians must provide documentation to the Florida Board that the applicant is skilled in designated clinical areas. Upon meeting these three requirements, the applicant will be given a probationary certification for a period of six months.

Physician's Assistant Training Program

The only physician's assistant program in Florida is in Gainesville and is a collaborative effort between the College of Medicine at the University of Florida and Santa Fe Community College. Upon completion of the state approved two-year program, students can receive an associate of science degree for physician's assistant.

An approved curriculum provides instruction in the basic sciences underlying medical practice to provide the trainee with an understanding of the nature of disease processes and symptoms diagnostic tests, drug actions, etc. To provide for this type of instruction courses may be given in patient evaluation, clinical procedures, pharmacology, medical science, pediatrics, human growth and development, obstetrics, gynecology, preceptorship, and physician's assistant seminars. The curriculum is combined with instruction, observation, and participation in history taking, physical examination, therapeutic procedures, etc. This diadactic instruction provides for a mixture of classroom lectures, textbooks assignments, discussions, demonstrations, and similar activities. The instruction includes practical instruction as well as clinical experience.

In addition to career health and clinical core courses, the student takes college core courses in three areas: communication/humanities, math/science, and social/behavioral science. The program insures that the students possess a broad understanding of medical practice and therapeutic techniques while allowing each student to concentrate his interest and efforts in a particular specialty of medicine.

In order to be qualified for entrance into a physician's assistant program in Florida, an applicant must meet the following requirements:

1. be a high school graduate or equivalent;

2. be in excellent physical and mental health;

3. have had the following college-level courses: two English or humanities or one of each, two behavioral or social science courses or one of each, and one inorganic chemistry course;

4. have had one year of direct patient care contact;

5. completed application form to include photograph along with educational transcript records, three personal evaluation forms; and scholastic aptitude test results; and

6. pay an application fee of $10.

The costs that students may incur will consist of tuition of $10 per credit hour for Florida residents or $22 per credit hour for non-Florida residents, $300 for books, $250 for equipment, and $100 for uniforms.

Review of Data

The figures in Table 21 show that almost 85 percent of the physician's assistant program graduates in Florida were able to pass the first National Board examinations given at Santa Fe Community College. The numbers relating to the students who passed the most recent exam were not available at the time this report was written.

Also noteworthy in Table 21 is the fact that all of the students enrolled in the fall of 1973 were able to graduate two years later.

According to the *Annual Report of the Physician's Assistant Program* (Spring 1975), for the class beginning in September 1975, 2,700 inquiries were received by the Physician's Assistant Program. Of these 2,700 inquiries, 348 completed applications were received. The program staff had personal interviews with 84 applicants and from this group, 30 were selected to enter the program in September 1975.

The potential for employment in Florida for physician's assistant is steadily increasing. In 1971 the Department of Professional and Occupational Regulation of the State of Florida included a question on the annual re-registration card which physicians must complete in order to renew their licenses, asking whether or not they would hire a physician's assistant if one were available. Of the 12,137 physicians who renewed their licenses in 1971, 4,644 (38 percent) responded they would hire a physician's assistant.

The survey was repeated in the spring of 1973 and was sent to 11,149 full-time physicians who were reviewing their licenses, of which 5,727 (51 percent) responded they would hire a physician's assistant.

At present there are approximately 100 physician's assistants employed in Florida. The director of the Physician's Assistant Program reports that a recent survey showed that the average starting salary for physician's assistants in Florida is $14,600 and that physicians employing these assistants show an increase in their net income of slightly over $5,000 per year.

The director also reported the survey found that 97 percent of the employing physicians were satisfied with the work being done by the assistants.

TABLE 21

PHYSICIAN'S ASSISTANT PROGRAM
LICENSING EXAMINATION RESULTS

Class	Number Enrolled	Number Graduated	Percent Graduating	No. Taking Nat. Board Exams	No. Passed Nat. Board Exams	% Passed Nat. Board Exams
Fall 1972 (Graduated: 1974)	22	15	68.2%	13	11	84.6%
Fall 1973 (Graduated: 1975)	23	23	100.0%	24 (1)	– (2)	--
Fall 1974 (Graduation: 1976)	30	--	--	--	--	--
Fall 1975 (Gradution: 1977)	32	--	--	--	--	--

(1) Includes enrollee from previous year.

(2) Test results not available at present.

SOURCE: Physician's Assistant Program, Santa Fe Community College.

PROFESSIONAL NURSING (R.N., A.D.)

Job Description

The practice of professional nursing in Florida is taken to mean the performance of any act requiring substantial specialized knowledge, judgment, and nursing skill based upon the principles of the psychological, biological, physical and social sciences in the application of nursing process. In general, the duties of a registered nurse (R.N.) are to give direct nursing care to the sick and injured, aid in the prevention of illness, and assist in the promotion of good health. Their technical functions may include the administering of treatments and medications as prescribed by the physician, observation, assessment, diagnosis, care or counsel, recording of the patient's progress, and instructing and supervising auxiliary personnel.

Licensing Requirements

Applicants for a registered nurse's license in Florida are required by the Florida State Board of Nursing to:

1. have completed at least an approved four-year high school course of study or equivalent;
2. be in good mental and physical health;
3. be of good character;
4. be a graduate of an approved school of nursing;
5. be able to communicate in the English language;
6. have completed and filed an application with the State Board no less than 60 days prior to scheduled date of exam for licensure;
7. pay a fee of $30 for license application; and
8. have passed a written exam administered by the Florida State Board of Nursing.

Professional Nursing Training Program

All schools of nursing in Florida must be approved by the Florida State Board of Nursing in order for their graduates to be eligible to write in the state licensing examination. Schools which have been accredited by the National League of Nursing have more than met the minimum requirements necessary for state approval.

There are three basic types of professional nursing programs in Florida: the associate degree programs, the diploma program, and the baccalaureate programs. Associate degree programs are offered in the community colleges and usually require two years to complete. The nursing curriculum combines both general and technical education. The technical phase of the curriculum is taught by nursing instructors who are college faculty members.

The oldest established type of nursing education program in the United States is the diploma program which is controlled by and located in hospitals. Students usually live in special dormitories on hospital grounds while receiving their training for professional nursing. Some of the educational experience is usually provided through affiliation with other institutions. The program is approximately 30 to 36 months in length.

The baccalaureate program is a four-year program offered at the university or college level, which includes two years of liberal arts study. In addition to the nursing training, students take course work in business and management to prepare them to assume managerial responsibilities.

An approved curriculum for nursing must consist of current theories of nursing practice related to five major areas of nursing: medical, surgical, obstetrical, pediatric, and psychiatric. The five concepts need to be integrated to include the following: nursing process, developmental tasks of all age groups with emphasis on geriatrics, sociological and cultural variation, pharmacology and administration of medications, nutrition, legal aspects of practice, interpersonal relationships, professional responsibilities, community health, and trends in nursing practice. The program combines the above nursing courses with clinical practice and general education. The general education courses include English, psychology, sociology, chemistry, mathematics, and technical reporting.

Review of Data

The data in Table 22 was taken from licensing examination statistics compiled by the Florida State Board of Nursing from 1972 to 1975. One of the more obvious conclusions drawn from a review of this table is that the percent of applicants passing the R.N. examination has remained fairly steady over the four-year period 1972-75. The table also shows that there was little difference during this time period in licensing rates for applicants from community colleges and licensing rates for applicants from all R.N. programs.

Table 23 contains information which is highly significant to the R.N. training programs in Florida. As shown in this table, the percent of R.N. licensing applicants coming from community college programs has increased greatly in the past four years. All of this growth seems to have been at the expense of the diploma programs. In 1972 there were four diploma programs; in 1975 there was only one diploma program left in operation. Since the percent of applicants coming from B.A. programs has remained rather constant, future years should see the community colleges playing an ever increasing role in supplying R.N.'s in Florida. This state of affairs is mainly the result of the fact that hospitals are finding it too expensive to operate R.N. diploma programs, and the public schools are able to provide the training at a lower cost.

Information regarding the total number of licensed R.N.'s by county in Florida was obtained from the Department of Professional and Occupational Regulation; this information is presented in Table 24. As might be expected, R.N.'s are distributed throughout the state in general conformity to the population of the counties--Liberty county showed only six currently licensed R.N.'s in July 1975 and Dade county had over 7,000.

The projected population growth in Florida calls for increasing numbers of trained persons to work in health related fields such as nursing. The Council concludes that the community colleges and school districts should continue to support the growth of both the R.N. and L.P.N. training programs.

TABLE 22

EXAMINATION RESULTS, FLORIDA PROFESSIONAL NURSING PROGRAMS (R.N. SERIES) COMMUNITY COLLEGES vs. STATE TOTALS

Year	# Taking Tests	# Passed Tests	% Passed Community College	Percent[1] Passed All Programs
1972	749	614	82.0%	84.7%
1973	972	832	85.6%	87.2%
1974	1,273	1,088	85.5%	86.6%
1975	1,372	1,125	82.0%	82.6%

(1) Includes baccalaureate, diploma programs, and community colleges.

SOURCE: State of Florida, Board of Nursing, Jacksonville, Florida.

TABLE 23

COMPARISON OF PERCENT OF TOTAL LICENSING APPLICANTS (R.N.) BY SOURCE - COMMUNITY COLLEGE, BACCALAUREATE, AND DIPLOMA PROGRAMS (1972-75)

Year	Community Colleges	B.A. Programs	Diploma
1972	68.15%	15.01%	16.84%
1973	72.59%	16.28%	11.13%
1974	77.76%	16.80%	5.44%
1975	78.40%	16.51%	5.09%

SOURCE: State of Florida, Board of Nursing, Jacksonville, Florida.

TABLE 24

CURRENT, INACTIVE, AND LAPSED R.N.
LICENSEES BY COUNTY
(as of July 31, 1975)

County	Current	Inactive	Lapsed
Alachua	1,216	117	167
Baker	27	1	2
Bay	301	67	124
Bradford	41	4	6
Brevard	1,292	214	235
Broward	4,712	664	818
Calhoun	16	3	1
Charlotte	222	50	15
Citrus	125	29	12
Clay	298	45	41
Collier	306	26	25
Columbia	209	27	24
Dade	7,287	1,128	1,993
DeSoto	75	19	9
Dixie	10	1	0
Duval	2,599	459	610
Escambia	1,095	215	422
Flagler	31	3	6
Franklin	12	7	4
Gadsden	115	17	18
Gilchrist	9	3	2
Glades	11	1	0
Gulf	25	2	5
Hamilton	15	5	2
Hardee	46	7	3
Hendry	41	5	7
Hernando	110	21	2
Highlands	168	39	26
Hillsborough	2,414	400	498
Holmes	24	2	2
Indian River	274	39	28
Jackson	95	16	14
Jefferson	15	5	1
Lafayette	8	1	1
Lake	411	84	39
Lee	731	125	100
Leon	653	113	149
Levy	40	10	5
Liberty	6	2	0

TABLE 24 con't.

County	Current	Inactive	Lapsed
Madison	29	4	2
Manatee	749	138	97
Marion	373	60	42
Martin	231	39	18
Monroe	236	55	100
Nassau	59	8	11
Okaloosa	361	65	125
Okeechobee	29	7	5
Orange	2,292	495	511
Osceola	139	29	16
Palm Beach	2,590	454	516
Pasco	461	93	42
Pinellas	4,260	1,074	825
Polk	1,223	190	176
Putnam	99	33	22
St. Johns	188	43	37
St. Lucie	277	49	44
Santa Rosa	216	26	56
Sarasota	1,205	250	159
Seminole	559	78	75
Sumter	43	9	2
Suwannee	53	10	5
Taylor	28	5	2
Union	11	1	1
Volusia	1,297	289	288
Wakulla	14	5	0
Walton	45	13	5
Washington	34	1	2
TOTALS	42,186	7,499	8,600

SOURCE: Department of Professional and Occupational Regulation, Tallahassee, Florida.

PRACTICAL NURSING

Job Description

Licensed Practical Nurses (L.P.N.) assist in the care and treatment of the physically and mentally ill. They perform their nursing duties under the direction of a registered nurse, a licensed physician, or a licensed dentist. They plan and give nursing care to selected patients whose conditions are relatively stable and free from complexity, and directly assist the registered nurse in caring for patients with more complex nursing needs. As a member of the nursing team, their functions include assisting the physician with complicated diagnostic procedures, treatments, patient care, and medications as ordered. The L.P.N.'s functions may also include charge nurse and supervisory position in nursing homes, extended care, and related facilities. Many serve as instructors and advisors in related fields.

Licensing Requirements

Applicants for a practical nursing license are required by the Florida Board of Nursing to:

1. have completed at least an approved four-year high school course of study or equivalent;
2. be in good mental and physical health;
3. be of good character;
4. have completed a program approved by the Florida State Board of Nursing for the preparation of L.P.N.'s;
5. be able to communicate in the English language;
6. have completed and filed an application with the State Board no less than 60 days prior to scheduled date of exam for licensure;
7. pay a fee of $20 for license application; and
8. have passed a written exam administered by the State Board of Nursing.

L.P.N. Training Programs

In the State of Florida the practical nursing program is a one-year program offered at public institutions such as community colleges and area vocational-technical centers and at one private institution--a hospital. A program approved by the Florida Board of Nursing requires a minimum of 1,300 hours of instruction to include classroom theory, laboratory practice, and clinical experiences. At least 50 percent of the total time of instruction must be alloted to clinical experiences. The instructional content must consist of: (1) vocational adjustments; personal, family, and community health concepts; normal nutrition, human growth and development; body structure, and function; and nursing needs of patients in all age groups. (These concepts are to be integrated to include interpersonal relationships, mental health concepts, pharmacology and administration of medications); (2) clinical experiences with patients in all age groups and in the following areas of nursing practice: medical-surgical, nursing of children, and obstetrical nursing; and (3) geriatric nursing in a long-term care facility.

Review of Data

The percent of school district and community college applicants passing the L.P.N. licensing examinations from 1972 to 1975 was very high. Table 25 shows that over 90 percent of public school applicants were successful at their first licensing exam attempt in each of the four years mentioned above.

As witnessed by Table 26, most of the applicants passing the L.P.N. examinations are from public schools. In 1975 over 98 percent of all persons passing the L.P.N. licensing exam were from either a school district or community college program. In 1975 only one hospital in Florida still operated a L.P.N. training program.

Table 27 presents the results of the VA survey of public school L.P.N. programs. At the time of this report all 10 community colleges offering L.P.N. training and 12 of the 19 school districts offering L.P.N. training had completed the VA Occupational Graduate Employment Record. The data gathered from these 22 schools indicates that about 94 percent of all students completing the L.P.N. program are employed in the same or closely related type of work for which they were trained. Assuming the validity of the data, it would seem that the overwhelming percent of L.P.N. graduates in Florida are able to find jobs once they have passed the licensing examinations.

A breakdown is given in Table 28 of the number of current, inactive, and lapsed L.P.N. licensees in each county in Florida. The range in the number of L.P.N.'s by county runs from a low of two (Glades county) to 2,762 (Dade county).

TABLE 25

EXAMINATION RESULTS
FLORIDA PRACTICAL NURSING PROGRAM
SCHOOL DISTRICTS AND COMMUNITY COLLEGES
(1972 to 1975)

Year	# Taking Texts	# Passed Tests	Percent Passed
1972	1,043	956	91.7%
1973	1,337	1,208	90.4%
1974	1,572	1,455	92.6%
1975	1,584	1,497	94.5%

SOURCE: State of Florida, Board of Nursing, Jacksonville, Florida.

TABLE 26

COMPARISON OF PERCENT OF SUCCESSFUL LICENSING APPLICANTS (L.P.N.) BY SOURCE: SCHOOL DISTRICTS, COMMUNITY COLLEGES, AND HOSPITALS (1972-75)

Year	Districts	Community Colleges	Hospital
1972	71.69%	24.30%	4.01%
1973	71.50%	26.32%	2.18%
1974	67.53%	31.32%	1.15%
1975	70.79%	27.70%	1.52%

SOURCE: State of Florida, Board of Nursing, Jacksonville, Florida.

TABLE 27

COMPARISON OF SURVEY RESULTS: PERCENT OF L.P.N. GRADUATES EMPLOYED IN SAME OR CLOSELY RELATED TYPE OF WORK COMMUNITY COLLEGES vs. AREA VOCATIONAL-TECHNICAL CENTERS (1973 to 1975)

	Community Colleges	Area Centers	Survey Total
Number of Schools	10	12	22
Number Students Enrolled	1,196	1,457	2,653
Number Students Completing Course	970	1,099	2,069
Percent Students Completing Course	81.1%	75.4%	78.0%
Percent Employed in Same Type Work	94.1%	91.7%	(1) 92.8%
Percent Employed in Same or Closely Related Type Work	95.6%	92.6%	(1) 94.0%

(1) Weighted

SOURCE: Occupational Graduate Employment Record, VA Form 22-8723.

TABLE 28

CURRENT, INACTIVE, AND LAPSED L.P.N. LICENSEES BY COUNTY
(as of July 31, 1975)

County	Current	Inactive	Lapsed
Alachua	402	53	72
Baker	16	0	1
Bay	221	31	47
Bradford	22	3	6
Brevard	335	78	98
Broward	1,947	205	314
Calhoun	21	8	2
Charlotte	67	5	20
Citrus	57	15	8
Clay	94	11	17
Collier	154	11	17
Columbia	73	8	18
Dade	2,762	377	914
DeSoto	25	9	14
Dixie	5	0	0
Duval	1,310	220	402
Escambia	886	114	175
Flagler	13	6	1
Franklin	7	2	1
Gadsden	100	16	21
Gilchrist	9	0	1
Glades	2	0	1
Gulf	28	3	5
Hamilton	10	0	0
Hardee	35	4	6
Hendry	22	3	3
Hernando	63	6	11
Highlands	96	12	20
Hillsborough	1,731	250	452
Holmes	15	3	3
Indian River	77	9	19
Jackson	91	23	23
Jefferson	23	4	7
Lafayette	8	0	2
Lake	232	49	44
Lee	320	33	49
Leon	293	52	69
Levy	31	3	10
Liberty	9	1	1

TABLE 28 con't.

County	Current	Inactive	Lapsed
Madison	26	4	3
Manatee	408	86	73
Marion	182	38	42
Martin	85	8	12
Monroe	76	17	31
Nassau	37	3	9
Okaloosa	130	28	41
Okeechobee	37	3	9
Orange	1,250	160	318
Osceola	86	10	27
Palm Beach	865	92	195
Pasco	290	41	35
Pinellas	2,042	379	505
Polk	698	95	175
Putnam	81	21	22
St. Johns	124	24	22
St. Lucie	110	16	21
Santa Rosa	124	14	11
Sarasota	641	101	98
Seminole	313	23	47
Sumter	22	4	5
Suwannee	71	14	11
Taylor	43	2	9
Union	6	0	0
Volusia	766	127	192
Wakulla	17	0	2
Walton	14	5	7
Washington	45	6	7
TOTALS	20,201	2,951	4,802

SOURCE: Department of Professional and Occupational Regulation, Tallahassee, Florida.

MASSEUR-MASSEUSE

Job Description

The massage operator (masseur or masseuse) is trained to practice in hospitals, clinics, sanitariums, hotel solaraia, reducing salons, and health clubs. The worker is referred to as a massuer (if a man), a masseuse (if a woman), or a massage operator.

A masseur or masseuse is further defined as a person who administers or teaches treatments with any mechanical or electrical apparatus for the purpose of body slenderizing, body reducing or body contouring. Methods of treatments include oil rubs, salt glows, hot or cold packs, all kinds of baths including steam rooms, cabinet baths, sitz baths, colon irrigations, body massage either by hand or by any mechanical or electrical apparatus or device (excluding fever theraphy), applying such movements as stroking, friction, rolling, vibration, kneading, cupping, pettrisage, rubbing, effuerage, and tapotement.

Licensing Requirements

In order to be licensed as a masseur or masseuse in Florida, a person must:

1. be a minimum age of 18 years;
2. be a citizen of the United States;
3. be of good moral character and temperate habits;
4. make an oath that he or she has not been convicted of any offense that would constitute a felony;
5. present a copy of fingerprints;
6. have a diploma or credentials issued by an accredited school of massage;
7. have a certificate of physical exam, including Wasserman test, within 30 days preceding the exam for licensure;
8. pass oral or written exam;
9. pay exam fee of $35; (NOTE: a fee of $10 is charged for second exam attempt if first exam is failed. For third exam attempt, the applicant has to make reapplication and pay a fee of $35).

10. serve an apprenticeship in lieu of attending a school:

    a. pays $25 for apprenticeship application;

    b. pays $35 for licensing exam within one year of completed apprenticeship; and,

    c. serve an apprenticeship for nine continuous months under the supervision of a licensed masseur-masseuse for five days a week, eight hours a day.

Masseur-Masseuse Training Program

There are two types of training available for masseurs-masseuses: course work at an approved school of massage and a nine-month apprenticeship.

The minimum requirement for a continuous course of study and training shall not be less than 950 hours distributed over a period of not less than six months. The course work must consist of the following:

200 hours of	physiology
200 hours of	anatomy
100 hours of	theory of massage including indications and contra-indications
200 hours of	hydro-theraphy
150 hours of	colon-theraphy and
100 hours of	hygiene and practical demonstration

In lieu of attending a school for training, an apprenticeship must consist of nine continuous months of training under the supervision of a licensed masseur-masseuse for five days a week, eight hours a day. The apprentice cannot do a massage until he/she has a minimum of 200 hours of observation and cannot do a massage without a licensed masseur-masseuse being in the room at all times. The apprenticeship program includes the study of anatomy, physiology, theory and practice of massage, hydro-theraphy, colon irrigation and hygiene.

There are three approved masseur-masseuse programs in Florida. Two are offered at private institutions and one at a public school. The public school program is the largest of the three. The public program is funded under cost category III through the FEFP at a cost factor of 2.18. This public program generates approximately $1,624 per FTE student at a base student cost of $745.

The public school program, which has been in operation for 29 years, charges a registration fee of $30. Textbook fees are $48, and students usually purchase two uniforms costing approximately $18 each.

Full-time classes at the public school usually run from 8 a.m. to 2:30 p.m. and from 4:40 p.m. to 10:00 p.m. Part-time classes are held in the evening for three hours.

Review of Data

Although the Council was unable to obtain any data from the two private schools, the public school program did furnish some valuable information about its program.

As shown in Table 29, the public school program has graduated over 50 percent of its masseur-masseuse enrollees since 1971. Of these 218 graduates, 210 (or 96.3 percent) have taken the licensing exam. Over 98 percent of those who took the exam passed. This is an excellent success rate and would seem to indicate that the public school masseur-masseuse program is doing a commendable job in training its students.

TABLE 29

MASSEUR-MASSEUSE PROGRAM COMPLETION AND LICENSING RATES - 1971-75

(Public School only)

Year	Number Students Enrolled	Number Completed	Percent Completed	Number Taking Exams	Number Passed Exams	% Passed Exams
1971	80	54	67.5%	54	52	96.3%
1972	60	32	53.3%	32	31	96.9%
1973	101	51	50.5%	49	49	100.0%
1974	91	55	60.4%	49	48	98.0%
1975	94	26	27.7%	26	26	100.0%
TOTALS	426	218	51.2%	210	206	98.1%

SOURCE: Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February 1976.

Table 30 shows masseur-masseuse employment by county in Florida. Perhaps the most significant fact emerging from this table is that over 70 percent of all masseur-masseuse employment in Florida is located in three counties: Broward, Dade, and Palm Beach. These three counties physically adjoin one another, thus leaving the obvious conclusion that most of the present employment opportunities for masseur-masseuse graduates are located in one section of the state--the extreme southeast.

TABLE 30

MASSEUR-MASSEUSE EMPLOYMENT BY COUNTY IN FLORIDA (as of July 31, 1975)

County	No. of Masseur-Masseuse	% of Total Masseur-Masseuse
Alachua	6	.6
Brevard	7	.7
Broward	149	14.8
Charlotte	1	.1
Citrus	1	.1
Collier	4	.4
Columbia	1	.1
Dade	433	43.0
Duval	22	2.2
Escambia	3	.3
Highlands	2	.2
Hillsborough	28	2.8
Indian River	2	.2
Lake	4	.4
Lee	10	1.0
Leon	5	.5
Levy	2	.2
Madison	1	.1
Manatee	3	.3
Marion	4	.4
Martin	6	.6
Monroe	5	.5
Okaloosa	1	.1
Orange	27	2.7
Osceola	1	.1
Palm Beach	125	12.4
Pasco	5	.5
Pinellas	94	9.3
Polk	5	.5
Putnam	2	.2
St. Johns	4	.4
St. Lucie	4	.4
Sarasota	16	1.6
Seminole	7	.7
Suwannee	1	.1
Volusia	14	1.4
Wakulla	1	.1
TOTALS	1,005	100.0%

SOURCE: Department of Professional and Occupational Regulations, Tallahassee,

MORTUARY SCIENCE
EMBALMERS AND FUNERAL DIRECTORS

Job Description

EMBALMER:

The licensed embalmer has the responsibility to attempt to disinfect or preserve the dead human body by the external or internal application of chemicals. Duties may also include preparation of an autopsied body, suturing incisions, application of cosmetics, restorative art treatment, and dressing and casketing the body.

FUNERAL DIRECTOR:

The funeral director is responsible for directing or supervising funeral services. His professional duties involve all the activities necessary for preparing dead human bodies for burial or cremation by means other than embalming. These activities may include making funeral arrangements with the family, clergy, bearers, drivers, organizations, etc.; supervising funeral services in a funeral home, chapel, church, cemetery, or other places; making financial arrangements for funerals whether for present or future needs; displaying and selling funeral supplies; preparing newspaper notices and death certificates; and general management of funeral home operation.

Licensing Requirements

To meet the requirements to be licensed as an embalmer in Florida, a person must:

1. be a resident of the State of Florida;
2. be a minimum age of 18 years;
3. complete a full prescribed course in a standard high school or equivalent;
4. be of good moral character and have not been convicted of any crime involving moral turpitude;
5. have completed and have vertification of practical training and instruction as an intern embalmer;

6. have successfully completed and have verification of schooling in mortuary science;

7. have embalmed at least fifty dead human bodies;

8. have proof of successfully passing the National Board Examination;

9. pay an examination fee of $50;

10. pay annual registration fee of $10 for training as an intern embalmer; and

11. pass the Florida State Board of Mortuary Science examination (written and oral).

For a person to be licensed as a funeral director in Florida, he/she must:

1. have met all the same qualifications as for an embalmer;

2. have been a practicing licensed embalmer of Florida for at least one year;

3. have completed and have verification of one year of practical training and instruction as an intern funeral director in an approved training agency under a licensed funeral director;

4. have proof of conducting at least fifty funerals;

5. pay an annual registration fee of $10 for training as an intern funeral director;

6. pay an examination fee of $50;

7. have proof of passing the National Board Examination for Funeral Directors; and,

8. pass the Florida State Board examination (written and oral).

Mortuary Science Training Program

There are two types of training available for embalmers: (1) three years of internship with one year of schooling in mortuary science, or (2) one year of internship and two years of school leading to an associate degree. Internship, which consists of practical training and instruction as an intern embalmer, may not be served during the time a person is enrolled at a school of mortuary science. The internship must be served in an intern training agency approved by the Board of Mortuary Science under a regular licensed and practicing embalmer. The intern embalmer must successfully embalm at least fifty dead human bodies during his internship.

A program of study in mortuary science in a school approved by the Board covers the following subjects: anatomy, physiology, chemistry, principles and methods of embalming, restorative art, bacteriology, public health and sanitation.

A program of study leading toward an associate degree may include supportive courses such as communication skills, technical reporting, social science, chemistry, management, accounting and dynamics of behavior. There is only one approved school of mortuary science in the State of Florida, and its program of study leads to an associate degree.

A training program for a licensed funeral director consists of one year of practical training and instruction as an intern funeral director in an approved training agency under a licensed funeral director. Before becoming qualified to serve an intern as a funeral director, a person must have practiced as a licensed embalmer of Florida for at least one year.

In addition to the above training, the National Board and State Board examinations must be passed by embalmers and funeral directors before they can be licensed to practice in the State of Florida.

Review of Data

The mortuary science program at Miami-Dade Community College has had 412 graduates out of a total enrollment since 1966 of 447. This completion rate of 92.2 percent is quite high and indicates that the program is successful in its attempts to provide quality training for its students.

The data displayed in Table 31 shows that almost three-fourths of the qualified applicants who took the Florida Board of Funeral Directors and Embalmers licensing examination were able to pass the exam. The figures in this table span the four-year period 1972-75 and represent total applicants, not just those from the Miami-Dade training program.

The percent of applicants passing a re-examination is fairly low. Table 32 covers the same four-year period 1972-75 and a glance at the figures in this table suffices to inform that only 25 percent of all applicants who had failed the initial exam and took a re-examination were able to pass on the second try. Regrettably, this information is not available in a form that would allow the Council to tell which of those applicants taking the re-examination were from the Miami-Dade program.

Table 34 provides an overview of the number of people in Florida, by county, who are licensed as funeral directors, intern embalmers, embalmers, and funeral director-embalmers. The 602 funeral homes licensed in Florida, as of July 31, 1975, had an average of about 3.5 employees. It appears as employment opportunities for persons in mortuary occupations in Florida are fairly consistent with the population spread throughout the state. There were, however, four counties with no funeral home, and an additional six had only one funeral home.

Tentatively, the data in Tables 31, 32, and 33 lead the Council to conclude that the supply of persons licensed in mortuary occupations has been able to keep pace with employment opportunities available in Florida. It is realized, however, that continued population growth in Florida will in turn create a greater demand for persons with occupational skills in the area of mortuary science.

TABLE 31

EXAMINATION RESULTS, FLORIDA BOARD OF FUNERAL DIRECTORS AND EMBALMERS (FY 72 to FY 75)

Year	No. Exam Applicants	No. Not Qualified For Exam	Number Passing	Percent Passing[1]
1971-72	124	17	88	82.2%
1972-73	138	11	44	34.6%
1973-74	193	8	146	78.9%
1974-75	176	14	144	88.9%
TOTALS	631	50	422	72.6%

[1] Percent based on qualified applicants.

SOURCE: State of Florida, Board of Funeral Directors and Embalmers, Jacksonville, Florida.

TABLE 32

RE-EXAMINATION RESULTS, FLORIDA BOARD OF FUNERAL DIRECTORS AND EMBALMERS (FY 72 to FY 75)

Year	No. of Re-Exams	# Passing Re-Exams	% Passing Re-Exams
1971-72	13	6	46.2%
1972-73	28	7	25.0%
1973-74	8	0	0.0%
1974-75	3	0	0.0%
TOTALS	52	13	25.0%

SOURCE: State of Florida, Board of Funeral Directors and Embalmers, Jacksonville, Florida.

TABLE 33

EMPLOYMENT IN MORTUARY OCCUPATIONS IN FLORIDA
(as of July 31, 1975)

County	Funeral Director	Intern Embalmer	Embalmer	Funeral Dir. & Embalmer	# Funeral Homes
Alachua	1	6	2	24	9
Baker	0	0	1	4	2
Bay	1	4	3	12	5
Bradford	0	3	0	3	2
Brevard	1	12	3	22	12
Broward	9	59	21	116	45
Calhoun	1	2	0	3	1
Charlotte	1	0	0	9	2
Citrus	1	2	1	7	7
Clay	0	2	0	3	3
Collier	1	5	2	10	5
Columbia	0	3	0	11	6
Dade	3	85	17	150	67
De Soto	0	0	0	3	2
Dixie	0	0	0	4	2
Duval	2	52	7	78	32
Escambia	1	13	4	18	7
Flagler	0	0	0	0	1
Franklin	0	0	0	3	3
Gadsden	0	4	0	12	6
Gilchrist	0	0	0	2	1
Glades	0	0	0	0	0
Gulf	1	0	1	2	2
Hamilton	0	0	0	3	2
Hardee	0	0	0	4	1
Hendry	0	2	0	3	3
Hernando	0	3	0	5	4
Highlands	0	4	1	11	9
Hillsborough	2	50	6	81	33
Holmes	0	1	1	3	2
Indian River	0	3	0	10	4
Jackson	3	3	5	8	7
Jefferson	0	0	0	2	3
Lafayette	0	0	0	0	0
Lake	3	9	3	22	13
Lee	0	9	1	20	11
Leon	0	4	1	16	4
Levy	0	1	0	4	3
Liberty	0	0	0	0	0

TABLE 33 con't.

County	Funeral Director	Intern Embalmer	Embalmer	Funeral Dir. & Embalmer	# Funeral Homes
Madison	1	1	0	4	2
Manatee	1	14	2	25	15
Marion	0	1	1	16	6
Martin	0	4	2	7	4
Monroe	0	5	0	8	6
Nassau	0	2	0	3	3
Okaloosa	0	5	0	13	5
Okeechobee	0	2	0	2	1
Orange	0	19	2	47	18
Osceola	[illegible]	3	2	11	3
Palm Beach	2	36	8	83	31
Pasco	1	10	1	25	11
Pinellas	7	56	14	129	59
Polk	8	16	8	57	27
Putnam	0	3	0	10	6
St. Johns	1	3	2	11	3
St. Lucie	0	8	2	17	6
Santa Rosa	0	3	1	9	3
Sarasota	1	14	6	44	16
Seminole	0	4	0	12	8
Sumter	0	1	0	4	3
Suwannee	0	5	0	8	5
Taylor	0	1	1	4	3
Union	0	1	0	1	0
Volusia	2	18	5	46	30
Wakulla	0	0	0	1	1
Walton	0	1	0	3	2
Washington	0	2	0	6	3
TOTALS	56	590	137	1,294	602

SOURCE: Department of Professional and Occupational Regulation, Tallahassee, Florida.

PART FOUR:

COMMERCIAL PILOT TECHNOLOGY, AIRFRAME AND POWERPLANT MECHANICS

COMMERCIAL PILOT TECHNOLOGY, AIRFRAME AND POWERPLANT MECHANICS

This part of the report deals with training programs which were the most difficult on which to gather valid and reliable data--the commercial pilot program and the airframe and powerplant mechanic programs. The difficulties surrounding data gathering are discussed more fully under each program review.

COMMERCIAL PILOT

Job Description

There are basically six types or levels of licenses for aviation arranged in a more or less step ladder fashion in which an applicant progresses from private pilot (the lowest level) to airline transport pilot (considered the highest level). The six types and levels of licenses are: (1) private pilot; (2) commercial pilot; (3) multiengine airplane class and type ratings; (4) instrument pilot; (5) flight instructor; and (6) airline transport pilot.

As described in the September 1975 addendum to *Standards for Vocational and Technical Education Courses*, the commercial pilot program is designed to prepare students to "pilot and eventually assume command responsibility for aircraft carrying passengers or freight."

License Requirements

Section 61.123 of the Federal Aviation Regulations (FAR) requires that for an applicant to be eligible for a commercial pilot certificate he/she must:

1. be at least 18 years of age;

2. be able to speak, read, and understand English, or have an operating limitation on his pilot certificate as is necessary for safety;

3. hold at least a valid second-class medical certificate;

4. pass a written examination appropriate to the aircraft rating sought on the subjects in which ground instruction is required;

5. pass an oral and flight test appropriate to the rating he seeks, covering items selected by the inspector or examiner from those on which training is required.

In addition the student is required to have a minimum of 200 hours of flight time. An exception is made in the case of military pilots; these personnel can receive a private or commercial license by passing the written exam.

The applicant's performance on the flight test is evaluated by the Federal Aviation Administration (FAA) inspector or examiner on the basis of the judgment, knowledge, accuracy, and smoothness displayed on the test. A competent performance of a flight maneuver is a performance in which the pilot is obviously the master of the airplane, and the successful completion of the maneuver is never seriously in doubt.

The FAA will often appoint an instructor at a school as the FAA examiner. The flight check exam fee will vary depending on the type of aircraft used. If a FAA examiner administers the flight check the test fee will be waived, whereas an appointed FAA school instructor will charge a fee. There is no fee for the written examination.

The VA will reimburse 90 percent of the cost of flight training in an approved school.

Commercial Pilot Training Programs

There are two types of commercial pilot schools: ground and flight. There are 111 VA approved pilot flight and ground schools in Florida. Of these 111 schools, 8 are public and the rest are privately owned and operated. The ground schools offer classroom and shop related training, while flight schools provide all types of instruction, including actual air practice.

The public school program, according to the 1975 addendum to the *Standards for Vocational and Technical Education Courses*, is planned to

> enable the student to acquire competency and knowledge in such fields as: aircraft structure, behavior, and operation; aircraft systems, instrumentation, and controls; radio communications as applied to aircraft; meterology; navigation; airways safety and traffic regulations; and other aspects of a pilot's duties and responsibilities.

The public school program is generally two years in length and includes a combination of theory, laboratory, and supportive courses.

The public school commercial pilot technology program is one of the more higher cost offerings. It is funded through the FEFP for district level programs at a cost factor of 4.26, thus generating (at a base cost of $745) almost $3,174 per full-time equivalent student.

Review of Data

There is a dearth of data available with which a valid and reliable assessment of the commercial pilot program might be made. Both the public and private schools conducting these programs keep few records which are compiled and reviewed here in Florida. It appears as if the schools reply on the FAA to handle most of the data associated with the program.

The Council staff contacted the FAA Aeronautical Center in Oklahoma City with the request for the data needed to conduct this part of the study. The FAA was only able to tell us the total number of airmen written tests administered during 1975 at FAA offices in Florida (1803). The FAA further stated that they were "unable to provide the number of applicants passing or a breakout by schools." They suggested we contact Washington, D. C. for the *FAA Statistical Handbook of Aviation*. A copy of this publication was obtained and reviewed by the Council staff. The document was found to have very little in the way of information which would be helpful to this study. There was, for example, no data in the report relating to licensing examinations.

The only other source of data available to the Council was the Occupational Graduate Employment Record compiled by the Veterans Administration. The results of follow-up surveys conducted by 32 of the private commercial pilot schools (Table 34) show that almost 80 percent of the graduates of the program are employed in the same or closely related type of work for which they have been trained.

A note should be made here that the commercial pilot's license is usually not enough in itself to secure employment. According to the Bureau of Aviation, Florida Department of Transportation, employers usually want job applicants to have a minimum of 1,000 hours of flight time, a multi-engine license, and an instructor's pilot license. If this information is correct, it would suggest that many of the commercial pilot students who obtain licenses are actually using this training as a kind of stepping stone to a higher level of licensing.

TABLE 34

FOLLOW-UP SURVEY OF COMMERCIAL PILOT STUDENTS: PRIVATE SCHOOLS ONLY 1973-75

Number of Schools	32
Total No. of Students Enrolled	1,441
No. of Students Completing Course	957
Percent Completing Course	66.4%
Percent Employed in Same Type Work	70.6%
Percent Employed in Same or Closely Related Type Work	79.4%

SOURCE: Occupational Graduate Employment Record: VA Form 22-8723.

AIRFRAME AND POWERPLANT MECHANICS

Job Description

Both the airframe and powerplant mechanics programs are designed to prepare persons for initial employment or to upgrade or retrain persons already employed in these fields under primary job titles taken from the *Dictionary of Occupational Titles* which are listed as:

621.281	Aircraft Airframe and Powerplant Mechanics
621.281-010	Aircraft and Powerplant Mechanic

Aircraft mechanics keep complicated jet airliners as well as small aircraft in good operating condition. These craftsmen perform preventive maintenance and make repairs. They also make inspections required by the Federal Aviation Administration (FAA).

Many aircraft mechanics do routine preventive maintenance. They change engine oil, grease wheel bearings, replace sparkplugs, and make other minor adjustments. Other mechanics specialize in engine work.

Airframe mechanics are qualified to work on fuselages, wings and landing gear; powerplant mechanics are qualified to work on engines. A mechanic licensed for both the airframe and the powerplant can work on any part of the plane.

License Requirements

The U. S. Department of Transportation publication *Airframe and Powerplant Mechanics Certification Guide* (Rev. 1973) points out the general eligibility requirements for a mechanic certificate. These requirements specify that to be eligible for a mechanic certificate and associate ratings, a person must:

1. be at least 18 years of age;

2. be able to read, write, speak, and understand the English language or in the case of an applicant who does not meet this requirement and who is employed outside the United States by a U. S. air carrier, have his certificate endorsed "Valid only outside the United States";

3. have passed all of the prescribed tests within a period of 24 months.

Each applicant for a mechanic certificate or rating must pass a written test covering the construction and maintenance of aircraft appropriate to the rating he seeks. The basic principles covering the installation and maintenance of propellers are included in the powerplant test.

The applicant must pass each section of the test before applying for the oral and practical tests. A report of the written test is sent to the applicant. There is no charge for the written exams. The fee charged for the practical test varies by school but is generally around $20.

Each applicant for a mechanic certificate or rating must present either an appropriate graduation certification or certificate of completion from a certified aviation maintenance technician school or documentary evidence of:

1. at least 18 months of practical experience with the procedures, practices, materials, tools, machine tools, and equipment generally used in constructing, maintaining or altering airframes or powerplants appropriate to the rating sought; or
2. at least 30 months of practical experience concurrently performing the duties appropriate to both the airframe and powerplant ratings.

Airframe and Powerplant Mechanics Programs

Powerplant mechanic programs are designed to provide specialized classroom and shop experiences concerned with the maintenance and repair of all types of powerplants for aircraft. According to the publication *Standards for Vocational and Technical Education Courses*, instruction in this program is given in both reciprocating and turbine engines. Powerplant lubricating systems, exhaust systems, ignition and electrical systems, instrument systems, engine fire protection systems and propellers are covered in detail.

The airframe mechanics program is concerned with the maintenance and repair of all aircraft parts other than powerplants, propellers, and instruments and structural components such as wood structure, fabric covering, aircraft finishes and sheet metal structures.

Both courses are normally 750 hours in length as prescribed by FAA regulations. Also, both courses received FEFP funding at the highest level (4.26) when offered through public school districts.

Review of Data

The Council experienced the same problem in gathering data for airframe and powerplant mechanics as it did for the commercial pilot programs. The FAA Aeronautical Center was only able to tell us that 771 persons took the airframe mechanic test in Florida during 1975; the number taking the powerplant mechanic written test during the same time period was 784.

Information supplied by the Veterans Administration was of some value, however. As Table 35 shows, the four public school programs surveyed by the VA had a poor completion rate. The four public schools, with an average enrollment of about 60 students per school, were able to graduate only 28.7 percent of their students, yet the one private school had a 100 percent completion rate. The difference in completion rates is too great to be merely a statistical fluke in the survey.

The percent of completers who were employed in the same or closely related type of work was higher for public school students than for the sample of private school students (88.9 percent versus 73.7 percent).

The public school district funding level for the airframe and powerplant mechanic programs is in the highest cost category. If for no other reason than this, vocational personnel in charge of administering the public school programs should seek to determine why their completion rates are so low. This determination might lead to the need for evaluating the cost-effectiveness of the public school airframe and powerplant mechanic programs.

TABLE 35

FOLLOW-UP SURVEY OF AIRFRAME AND
POWER PLANT MECHANICS STUDENTS
1973-75

	Public	Private	Total
Number of Schools	4	1	5
Number Students Enrolled	363	307	670
Number Students Completing Course	104	307	411
Percent Completing Course	28.7%	100.0%	61.3%
Percent Employed in Same Type of Work	85.7%(1)	68.6%(2)	73.6%
Percent Employed in Same or Closely Related Type Work	88.9%(1)	73.7%(2)	78.1%

SOURCE: Occupational Graduate Employment Record, VA Form 22-8723.

(1) Usable Response rate 90%

(2) Usable Response rate 71%

PART FIVE:

SUMMARY AND RECOMMENDATIONS

PART FIVE

SUMMARY AND RECOMMENDATIONS

This section of the report deals with some of the major findings of the study. First, a review is made of the commonalities found among the license requirements of the various programs; Next, accomplishments and unmet needs are summarized from the data appropriate to the 13 programs; Lastly, Council recommendations are offered to the Florida Board of Education based upon the findings of the study.

Commonalities of the License Requirements

A review of the licensing requirements for the 13 programs studied in this report revealed that many of the programs had requirements which were similar to one another in several respects. Table 36 displays the major licensing requirements of each of the programs, and many commonalities may be noted. Since these requirements have been discussed in earlier portions of this study, they will not be repeated at this point.

It should be pointed out, however, that many of the requirements shown in Table 36 are minimum requirements and that additional requirements may be placed upon students by the training institutions.

It should also be pointed out that some of the requirements seem to bear no direct relation to whether the licensee will be competent in the licensed area. One of the programs, for example, is not open to persons who have been convicted of any kind of felony. There are no evident reasons for this requirement, and it might prove helpful if a review of all licensing requirements were made for the purpose of studying the relevance of each requirement.

TABLE 36

COMPARISON OF LICENSING REQUIREMENTS AMONG 13 OCCUPATIONAL PROGRAMS IN FLORIDA

	Barbering	Cosmetology	Cosmetology Specialist	Dental Hygiene	EMT I	Physician Assistant
Age	18	16	17		18	
U. S. Citizen		Yes	Yes	Yes		
Florida Resident	No	No	No	No	No	No
High School Diploma/Equiv.	10th gr.	10th gr.	10th gr.	Yes	Yes	Yes
Good Physical Health		Yes	Yes	Yes	Yes	Yes
Good Mental Health				Yes	Yes	Yes
Doctor's Certificate		Yes	Yes			
Good Moral Character and Temperate Habits	Yes	Yes	Yes	Yes	Yes	Yes
Graduate of Approved Program	Yes	Yes	Yes	Yes	Yes	Yes
Number of Hours	1500	1200	500		81	
Time Period	8-9 mo.	7-18 mo.		2 yr.		2 yr.
Apprenticeship	Yes	Optional	No	No	No	No
Time Period	6 mo.	1 or 2 yrs.				
Under Licensed Supervisor	Yes	Yes				
License	Yes	Yes				
State Exam	Yes	Optional	Yes	Yes	Yes	No
Oral	No	Yes	Yes			
Written	Yes	Yes	Yes	Yes	Yes	
Practical	Yes	Yes	Yes	Yes		
Exam Cost	$35	$35	$35	> $25	> $15	
License/Certification Cost	$10	$10	$10			$25
National Exam	No	No	No	Yes	No	Yes
License Renewal	$10-12 yr.	$10 yr.	$10 yr.	$10 yr.	$15 yr.	$15 yr.

TABLE 36 con't.

COMPARISON OF LICENSING REQUIREMENTS AMONG 13 OCCUPATIONAL PROGRAMS IN FLORIDA

	Nursing R.N.	Practical Nursing	Masseur-Masseuse	Mortuary Science	Commercial Pilot	Airframe and Powerplant Mech.
Age			18	18	18	18
U. S. Citizen					No	No
Florida Resident	No	No	Yes	Yes	No	No
High School Diploma/Equiv.	Yes	Yes	No	Yes	No	No
Good Physical Health	Yes	Yes	Yes		2nd class medical certificate	
Good Mental Health	Yes	Yes				
Doctor's Certificate						
Good Moral Character and Temperate Habits	Yes	Yes	Yes	Yes		
Graduate of Approved Program	Yes	Yes	Yes	Yes	Yes	Yes
Number of Hours						
Time Period	2-4 yr.	1 yr.		1 or 2 yr.		
Apprenticeship	No	No	in lieu of school	Yes	No	No
Time Period			9 mo.	1 or 3 yr.		
Under Licensed Supervisor			Yes	Yes		
License			$25			
State Exam	Yes	Yes	Yes	Yes	No	No
Oral			Yes	Yes		
Written	Yes	Yes	Yes	Yes		
Practical						
Exam Cost	> $30	> $20	> $35	> $50		
License/Certification Cost						
National Exam			No	Yes	Yes	Yes
License Renewal	$4 yr.	$4 yr.	$20 yr.	$10 yr.		

Summary of Data Findings

An overall view of the data compiled for this study provides the Council with examples of vocational and technical education programs which range from highly successful to those which need much closer review. It should be pointed out that the pluses (successful programs) far outweigh the minuses (programs in need of closer review).

With this last thought in mind, the Council would like to note some of the more laudatory findings of this study:

1. In those programs for which data was available, a high percentage of public and private school vocational and technical education students were found to be passing the applicable state and national licensing examinations required.

2. Some programs are extremely successful in terms of having their graduates enter into employment in the field for which they were trained.

3. Enrollment growth in some programs indicates an awareness by public vocational and technical schools to increases in employment demand.

The above accomplishments are indicative of the success most of the 13 programs reviewed in this study have had in training vocational and technical students. The study has, however, resulted in bringing into focus some areas of concern to the Council. The major concerns of the Council center upon the following:

1. The public school barbering program is a relatively high cost, low productivity program which contributes very little to the statewide supply of barbers in Florida.

2. Students from high school cosmetology programs had a licensing exam success rate in 1975 which was approximately 20 percent lower than that obtained by students from all other public and private cosmetology programs.

3. Several schools offering EMT I training programs have no records of the licensing examination results achieved by their students. The Council wonders how these schools are able to say whether or not their programs are successful.

4. Very little usable data is available with which commercial pilot, airframe, and powerplant mechanic programs may be evaluated in terms of licensing rates.

Council Recommendations

After reviewing the data and findings presented in the preceding sections of this report, the Council makes the following recommendations:

1. The Florida Department of Education should establish systematic procedures which will enable the Department to measure the effectiveness of vocational and technical education programs designed to train students in occupational areas requiring licenses.

   Information should be gathered which will focus upon:

   A. the percent of students completing the course;

   B. the percent of completers taking the licensing examinations;

   C. the percent of completers from "B" above who pass the examinations;

   D. comparisons, where applicable, among high schools, area centers, community colleges, and private schools.

2. The Florida Department of Education should conduct cost-benefit analyses on the following public school programs:

   A. high school cosmetology,

   B. commercial pilot, and

   C. airframe and powerplant mechanics.

   The results of these analyses should be an integral part of any assessment made on the four occupational programs.

3. State licensing boards for the occupations included in this study should review licensing requirements to determine the job relatedness of the requirements.

SOURCES OF DATA

General Sources

Personal Interviews:

Administrator, State Approving Section for Veterans Training, Florida Department of Community Affairs, Tallahassee, Florida. (September and November, 1975).

Chief of Bureau of Records, Florida Department of Professional and Occupational Regulations, Tallahassee, Florida (September, 1975).

Coordinator, Veterans Education, Florida Department of Education, Tallahassee, Florida (November, 1975).

Other:

Public Education Act of 1975, CS for CS for HB 984. Florida Legislature, 1975.

Standards for Vocational and Technical Education Courses, Bulletin No. 70H-25. Tallahassee: Florida Department of Education, July, 1974.

Standards for Vocational and Technical Education Courses, Bulletin No. 70H-25, Addendum. Tallahassee: Florida Department of Education, September, 1975.

Barbering

Personal Interview:

Director, Florida Barbering Sanitary Commission, Tallahassee, Florida (September, 1975).

Other:

Florida Law Relating to the Practice of Barbering, Chapter 476, 1968.

Occupational Graduate Employment Record, VA Form 22-8723.

Unnumbered Computer Printouts, Florida Department of Professional and Occupational Regulations, Tallahassee, Florida.

Cosmetology and Cosmetology Specialist

Personal Interview:

Coordinator, Florida State Board of Cosmetology, Department of Professional and Occupational Regulations, Division of Occupations, State of Florida, Winter Haven, Florida (August, 1975).

Other:

Florida Cosmetology Law, Chapter 477, Florida Statutes, 1973.

Occupational Graduate Employment Record, VA Form 22-8723.

Rules and Regulations of Florida State Board of Cosmetology, Chapters 21F-1 to 21F-3, 1975.

Unnumbered Computer Printouts, Florida Department of Professional and Occupational Regulations, Tallahassee, Florida.

Year End Report of School Activities, Fiscal Year 1973-74, Florida State Board of Cosmetology, Winter Haven, Florida.

Year End Report of School Activities, Fiscal Year 1974-75, Florida State Board of Cosmetology, Winter Haven, Florida.

Year End Report: Fiscal Year 1974-75, Florida State Board of Cosmetology, Winter Haven, Florida.

Dental Hygiene Technology

Personal Interview:

Staff Personnel, Florida State Board of Dentistry, Jacksonville, Florida (September 9, 1975).

Other:

Florida Dental Practice Law, Chapter 466, Florida Statutes, 1973.

Information and Regulations Regarding Examination for License to Practice Dental Hygiene. Jacksonville: Florida State Board of Dentistry, 1975.

Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February, 1976.

Emergency Medical Technology I

Personal Interview:

Staff Personnel, Emergency Medical Services Section, Division of Health, Department of Health and Rehabilitative Services, Jacksonville, Florida (September, 1975).

Other:

Emergency Medical Technician I Policies and Procedures. Jacksonville: Department of Health and Rehabilitative Services, No date given.

Emergency Medical Services Systems Act of 1973. Public Law 93-154, 93rd Congress, S. 2410, November 16, 1973.

Florida Statutes, Chapter 73-126, CS for HB 124.

Florida Statutes, Chapter 73-254, HB 205.

Florida Statutes, Chapter 73-262, HB 447.

Occupational Graduate Employment Record, VA Form 22-8723.

Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February, 1976.

Physician's Assistant

Personal Interview:

Director, Physician's Assistant Program, Santa Fe Community College, Gainesville, Florida (January, 1976).

Other:

Annual Report of the Physician's Assistant Training Program. Gainesville: College of Medicine, University of Florida-Santa Fe Community College, Spring 1975.

Florida Medical Practices Act. Chapter 458, Florida Statutes.

Florida State Board of Medical Examiners Certification Procedures for Physician's Assistants.

Registered Nursing (R.N.) and Licensed Practical Nursing (L.P.N.)

Personal Interview:

Executive Secretary, Florida State Board of Nursing, Jacksonville, Florida (September 8, 1975).

Other:

Annual Report of Nursing Programs, FY 1972, 1973, 1974, and 1975. Jacksonville: Florida State Board of Nursing.

Nurse Practice Act. Chapter 464, Florida Statutes.

Occupational Graduate Employment Record, VA Form 22-8723.

Rules and Regulations of Florida State Board of Nursing. Chapter 210, Florida Statutes.

Unnumbered Computer Printouts, Florida Department of Professional and Occupational Regulations, Tallahassee, Florida.

Masseur-Masseuse Technology

Personal Interview:

Staff Personnel, Florida Board of Massage, Tallahassee, Florida. (August 1975 to January 1976).

Other:

Laws, Rules and Regulations of Florida Board of Massage. Chapter 480, Florida Statutes, August, 1974.

Occupational Licensing Survey Questionnaire, Florida State Advisory Council on Vocational and Technical Education, February, 1976.

Unnumbered Computer Printouts, Florida Department of Professional and Occupational Regulations, Tallahassee, Florida.

Mortuary Science

Personal Interview:

Staff Personnel, State Board of Funeral Directors and Embalmers of Florida, Jacksonville, Florida (September 8-9, 1975).

CE 008 341

Other:

Director, Department of Mortuary Science, Miami-Dade Community College, Miami, Florida. Telephone conversation, December 11, 1975.

Laws of Florida Board of Funeral Directors and Embalmers. Chapter 470, Florida Statutes, 1974.

Unnumbered Computer Printouts, Florida Department of Professional and Occupational Regulations, Tallahassee, Florida.

Commercial Pilot Technology, Airframe and Powerplant Mechanics

Personal Interview:

Staff Personnel, Aviation Bureau, Florida Department of Transportation, Tallahassee, Florida (August 27, 1975).

Other:

Airframe and Powerplant Mechanics Certification Guide, AC-65-2C. Washington, D. C.: Federal Aviation Administration, Department of Transportation, 1973.

Dictionary of Occupational Titles.

FAA Statistical Handbook of Aviation, Calendar Year 1974. Washington, D. C.: Federal Aviation Administration, Department of Transportation, 1975.

Letter, from Chief, Operations Branch AAC-240, FAA Aeronautical Center, Oklahoma City, Oklahoma, January, 1976.

Occupational Graduate Employment Record, VA Form 22-8723.